



1 ORIGINAL

BEFORE THE ARIZONA CORPORATION COMMISSION

2 COMMISSIONERS

3 MIKE GLEASON, Chairman
4 WILLIAM A. MUNDELL
5 JEFF HATCH-MILLER
6 KRISTIN K. MAYES
7 GARY PIERCE

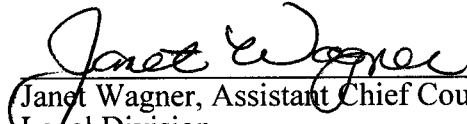
8 IN THE MATTER OF THE APPLICATION OF
9 ARIZONA PUBLIC SERVICE FOR A
10 HEARING TO DETERMINE THE FAIR
11 VALUE OF THE UTILITY PROPERTY OF
12 THE COMPANY FOR RULEMAKING
13 PURPOSES, TO FIX A JUST AND
14 REASONABLE RATE OF RETURN
15 THEREON, TO APPROVE RATE
16 SCHEDULES DESIGNED TO DEVELOP
17 SUCH RETURN.

DOCKET NO. E-01345A-08-0172

**STAFF'S NOTICE OF FILING DIRECT
TESTIMONY (INTERIM RATES)**

12 Staff of the Arizona Corporation Commission ("Staff") hereby files the Direct Testimony of
13 Staff Witnesses Ralph C. Smith and David C. Parcell in the above-referenced matter.

14 RESPECTFULLY SUBMITTED this 29th day of August, 2008.

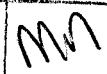
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27 Docket Control
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Arizona Corporation Commission
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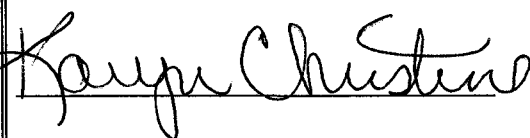
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DIRECT

TESTIMONY

OF

RALPH C. SMITH

DAVID C. PARCELL

DOCKET NO. E-01345A-08-0172

**IN THE MATTER OF THE APPLICATION OF
ARIZONA PUBLIC SERVICE COMPANY FOR
A HEARING TO DETERMINE THE FAIR
VALUE OF THE UTILITY PROPERTY OF THE
COMPANY FOR RATEMAKING PURPOSES,
TO FIX A JUST AND REASONABLE RATE OF
RETURN THEREON, AND TO APPROVE
RATE SCHEDULES DESIGNED TO DEVELOP
SUCH RETURN**

AUGUST 29, 2008

BEFORE THE ARIZONA CORPORATION COMMISSION

MIKE GLEASON

Chairman

WILLIAM A. MUNDELL

Commissioner

JEFF HATCH-MILLER

Commissioner

KRISTIN K. MAYES

Commissioner

GARY PIERCE

Commissioner

IN THE MATTER OF THE APPLICATION OF)
ARIZONA PUBLIC SERVICE COMPANY FOR)
A HEARING TO DETERMINE THE FAIR)
VALUE OF THE UTILITY PROPERTY OF THE)
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TO FIX A JUST AND REASONABLE RATE OF)
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SUCH RETURN)

DOCKET NO. E-01345A-08-0172

DIRECT

TESTIMONY

OF

RALPH C. SMITH

ON BEHALF OF THE

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

AUGUST 29, 2008

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ATTACHMENTS:

Qualifications	RCS-1
Copies of selected APS responses to discovery and other documents that are referenced in my testimony...	RCS-2,
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**EXECUTIVE SUMMARY
ARIZONA PUBLIC SERVICE COMPANY
DOCKET NO. E-01345A-08-0172**

Staff recommends that APS' request for an interim rate increase be denied.

My testimony addresses the following issues:

- A. The Interim Rate Relief Requested by APS
- B. Criteria for Interim Rate Relief
- C. Ordinary Regulatory Lag Does Not Justify APS' Requested Interim Rate Relief
- D. Alleged Emergency Circumstances
- E. Whether APS Requires an Interim Rate Increase During the Processing of its General Rate Case
- F. An Alternative Basis for Determining an Amount of Interim Rate Increase for APS Should the Commission be Inclined to Grant an Increase
- G. Rate Design

A. The Interim Rate Relief Requested by APS

APS is seeking an interim rate increase of approximately \$115 million, or approximately 4 mills per kWh, to be effective with the first billing cycle of November, 2008. If granted, any interim rates would be subject to refund with interest, pending the Commission's final decision in APS' general rate case.

APS' application at various places claims that, from the end of the September 30, 2005, test year used to set the Company's present rates in Decision No. 69663 (6/28/2007) to May 31, 2008, the Company has invested in over \$1.7 billion for new facilities that are not reflected in current rates. APS' response to Staff Interim 1.13 states that the purpose of the surcharge would be to ameliorate the detrimental impact of the Company's rising non-fuel costs until the Commission has the opportunity to enter an order on the Company's permanent rate request in the underlying general rate case.

APS points to a number of factors as supporting its request for interim rates, including: its inability in recent years to earn its authorized return on equity (ROE); its recent actual and projected net cash flow, which requires access to outside financing; the poor stock price performance of its parent company, Pinnacle West Capital Corporation ("PNW" or "PWCC") compared with other investor-owned utilities; its bond ratings, which APS states are "currently among the lowest they can possibly be without being regarded as 'junk'"; and its Funds From Operations to Debt ("FFO/Debt") ratio, which APS asserts is the key financial metric examined by the credit rating agencies, and which measures the sufficiency of a company's cash flow to service both debt interest and debt principal over time. For APS' present "business profile" category, APS states that Standard & Poor's expects APS to maintain an FFO/Debt ratio of 18% to 28%. If no rate increase is granted in the current general rate case, APS projects its FFO/Debt

ratio will decline to 17.6% at the end of 2009 and to 16.6% at the end of 2010 under present rates, even with an equity infusion of \$400 million.

APS claims that the Company's financial condition will continue to deteriorate during the period of regulatory lag associated with the processing of a general rate case, and the Company will once again be on the brink of a downgrade to junk credit status in 2009 before the Commission will likely have ruled on its general rate application.

B. Criteria for Interim Rate Relief

Interim rate increases can be appropriate if the Commission is unable to process a utility's base rate increase request in a timely manner, if the utility is experiencing an emergency, or if other special circumstances are present.

An emergency could generally include circumstances that threaten or interfere with a Company's ability to provide safe and reliable service, such as insolvency or a sudden, unanticipated occurrence. Some conditions that could constitute a financial emergency include an inability to raise capital at reasonable terms, inability to meet required coverage ratios specified in bond indentures, a cash flow crisis, or an inability to pay current expenses.

In Docket No. E-01345A-06-0009, Staff concluded that the question of what qualifies as an emergency is largely an issue of fact for the Commission to decide. Staff also concluded that the facts in that case did not warrant emergency interim rate relief. The following quote from pages 3-4 of Staff's brief summarizes the evaluation by Staff in that proceeding:

Most emergency rate cases before the Commission in the past ten to fifteen years involved small water systems facing a crisis of being unable to provide adequate and reliable service without an immediate increase in rates. Many of the cases involved significant operational and maintenance deficiencies. See Decision Nos. 57841 (Mountain View Water Company) and 67990 (Sabrosa Water Company). Others involved water quality and regulatory compliance issues from other state agencies. See Decision Nos. 61833 (Far West Water Company) and 62651 (Thim Utility Company, E&T Division). The Commission, however, has also denied or partially denied applications for emergency rate relief. See Decision Nos. 57668 (E & R Water Company et. al.), 59250 (Mountain View Water Company) and 61930 (Vail Water Company). Appendix A lists several cases where the Commission has heard emergency interim rate relief cases, some of which have been cited above. In the majority of those cases where emergency interim rate relief was approved, the crisis defined by the company had already occurred or was occurring.

...

The evidence in this case is that there is no threat of insolvency or a liquidity crisis if APS' request is not granted. (Tr. at 392). APS contends that the possible downgrade of its credit rating to junk status is the emergency at hand, and that this meets the criteria of an emergency set forth in the Arizona Attorney General's

Opinion 71-17...Staff does not agree with APS that a downgrade is imminent based on what the credit rating agencies have stated in their written reports. In other words, a sudden change to APS' credit rating appears unlikely...And no evidence was presented that APS will not be able to continue providing adequate and reliable service before the permanent rate case is resolved. The public interest does not necessitate the granting of emergency interim rate relief requested by APS.

The current APS request for an interim rate increase bears some similarities with Docket No. E-01345A-06-0009. Again, APS has focused concern on the potential for a credit ratings downgrade. One key difference between that 2006 APS emergency rate increase request and APS' current request for interim rates is that in Docket No. E-01345A-06-0009 a primary focus was on the operation of APS' Power Supply Adjustor ("PSA") mechanism and the potential under that mechanism, as it existed at that time, for growing deferrals of fuel cost. In APS' current application for interim rates, the operation of the PSA is not a significant concern, as I explain in a subsequent section of my testimony. APS' has instead focused its present request for Interim Rates on the alleged negative impact of regulatory lag as it applies to APS' recovery of plant investment.

C. Ordinary Regulatory Lag Does Not Justify APS' Requested Interim Rate Relief

A procedural schedule has been established for processing APS' general rate case. While unforeseen events may occur, at this time Staff expects that it will be processed according to the established procedural schedule.

At page 2, lines 16-17, of its application APS has claimed that it has expended \$1.7 billion for new facilities that are not reflected in current rates. APS' response to Staff Interim 2.96(f) provided a breakout of the \$1.7 billion by type of plant and period. The \$1.7 billion claimed by APS includes \$297 million of capital expenditures beyond December 31, 2007, the end of the test year in the current rate case. Moreover, the APS capital expenditures do not directly translate into a rate base increase because during the same time frame Accumulated Depreciation, which is an offset to gross plant, is also growing significantly. Consequently, the \$1.7 billion is not an appropriate basis for determining the increase in APS' net plant in service between the end of its last test year and the end of the test year in the pending general rate case. The \$1.7 billion, in essence, does not represent the net amount of jurisdictional rate base increase that has been financed by investors. In fact, it significantly overstates that amount.

Based on a preliminary review of APS' current general rate case application, a comparison between the rate base specified in Decision No. 69663 from APS' last rate case, which had used a test year ending September 30, 2005, through the end of the test year in the current rate case, December 31, 2007 (without pro forma adjustments), APS' jurisdictional rate base has grown by approximately \$538 million.

Although these factors should be examined in the general rate case, they do not necessitate interim rate relief within the circumstances of this case. Regulatory lag is an ordinary and anticipated feature of regulation. One of the useful functions of regulatory lag is to place

financial responsibility upon the utility for fluctuations in costs between rate cases. The regulatory lag feature of Rate Base/Rate of Return regulation is essential to effective and efficient operation of such a regulatory régime. Because of the lag between placing new plant into service and obtaining rate recognition of such plant, the utility may bear the cost of new plant additions temporarily. This can encourage management to emphasize cost control to a higher degree than might be expected if cost responsibility for plant additions during the periods between rate cases were shifted away from the utility and onto ratepayers. In evaluating plant additions, the Company should conduct a cost-benefit analysis to determine if there is a business case for implementing the plant additions in the time frame budgeted by the Company. If the case is compelling and the project is cost-justified, no additional special ratemaking treatment is needed. If the project is not cost-justified or the benefits are too speculative to warrant the commitment of funds, it may be prudent to delay or avoid the related capital expenditures. These incentives that are currently in place would be lessened if ordinary regulatory lag began to be utilized by Arizona utilities as a justification for interim rate increases. Absent some emergency or other exceptional circumstance, ordinary regulatory lag by itself does not warrant the extraordinary relief of an interim rate increase.

D. Alleged Emergency Circumstances

Pages 18-19 of APS witness Brandt's affidavit claims that: "... notwithstanding proactive efforts from the Company and Pinnacle West, APS' credit metrics will fall into junk credit range during the course of the Company's rate proceedings, before the Commission is likely to grant the much-needed rate relief. I firmly believe that the Company will more than likely be downgraded to junk during the pendency of the general rate case proceedings without interim relief." In response to Staff Interim 2.97, APS stated that: "While the Company hopes that it is able to continue to provide safe and reliable electric service to customers in 2008 and 2009 and intends to do so, the Company's interim base rate request is intended to support its overall financial health so that its ability to offer reliable electric service will not be jeopardized in the future."

APS is not currently experiencing a financial emergency. Staff's analysis reveals that APS has been and continues to be able to obtain financing. As explained in my and Staff witness Parcell's testimonies, APS is not currently experiencing a financial crisis and is not facing a cash flow emergency.

APS' response to data request Staff Interim 2.50 (among others) shows that APS' current long term debt ratings are:

S&P: BBB-
Moody's: Baa2
Fitch: BBB

A downgrade of APS' credit rating does not appear imminent or probable during the processing of APS' general rate case. According to APS' response to data request Staff Interim 2.27(b) no credit rating agencies have announced that APS' debt would be downgraded if APS' request for interim rates were to be denied. All three credit rating agencies list APS' outlook as "stable."

Staff concludes that APS has not identified any sudden or unanticipated circumstance affecting its ability to offer reliable electric service that would justify an interim rate increase.

E. Whether APS Requires an Interim Rate Increase During the Processing of its General Rate Case

Attachment RCS-3, page 20 lists the ranges of financial risk indicative ratios for a corporation or a U.S. utility, such as APS, with a business risk profile of "strong" and a financial risk profile of "aggressive." A similar listing of ranges indicated by S&P for U.S. Utilities appears in Attachment RCS-2, page 63. The ranges listed by S&P for the applicable "financial risk indicative ratios" are:

S&P 2008 Corporate and U.S. Utilities Ratings Criteria		U.S.
Financial Risk Indicative Ratios*	Corporate[1]	Utilities[2]
BBB- Range		
Cash flow (funds from operations/Debt) %	15-30	10-30
Cash flow (FFO/interest) (times)		2.0-3.5
Debt leverage (Total debt/Capital) %	45-55	45-60
Debt/EBITDA (times)	3.0-4.5	
*Fully adjusted, historically demonstrated, and expected to continue consistently Business risk profile "solid"; financial risk profile "aggressive"		
[1] Standard & Poor's 2008 Corporate Ratings Criteria		
[2] Source: Standard & Poor's Ratings Direct, 11/31/2007; U.S. Utilities Ratings Analysis Now Portrayed in the S&P Corporate Ratings Matrix		

Staff data requests 2.59 and 2.60 asked APS to run various scenarios of interim and permanent rate increases, and to calculate the impact on its FFO/Debt ratio, among other things. The following table summarizes those results from APS' second supplemental response to Staff Interim 2.59:

APS Calculated FFO/Adjusted Total Debt Under Various Scenarios

Case #	Description[a]	Estimated FFO/Adjusted Total Debt		
		2008	2009	2010
1	100% of \$115M Interim Nov'08, 100% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.3%	20.7%	21.3%
2	100% of \$115M Interim Nov'08, 50% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.3%	20.2%	18.9%
3	50% of \$115M Interim Nov'08, 100% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.2%	19.9%	21.0%
4	50% of \$115M Interim Nov'08, 50% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.2%	19.4%	18.7%
5	No \$115M Interim Nov'08, 100% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.0%	19.1%	20.8%
6	No \$115M Interim Nov'08, 50% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.0%	18.7%	18.5%
7	50% of \$115M Interim Nov'08, 75% of Non-Fuel Base Rate Increase 10/1/09 (7.5%)	23.2%	19.7%	19.8%
8	50% of \$115M Interim Nov'08, 25% of Non-Fuel Base Rate Increase 10/1/09 (2.5%)	23.2%	19.2%	17.6%
9	No \$115M Interim Nov'08, 75% of Non-Fuel Base Rate Increase 10/1/09 (7.5%)	23.0%	18.9%	19.7%
10	No \$115M Interim Nov'08, 25% of Non-Fuel Base Rate Increase 10/1/09 (2.5%)	23.0%	18.4%	17.4%

Notes

[a] All case scenarios shown in this table also reflect an assumed fuel-related increase effective 10/1/09 (7%)

As shown in the above table, with no interim increase and assuming 50% of its base rate increase is granted with rates effective October 1, 2009, APS' FFO/Debt ratio is expected to be 23.0% in 2008, 18.7% in 2009, and 18.5% in 2010, all of which are within Standard & Poor's BBB- "investment grade" range for a corporation with APS' business and financial risk profile of 15% to 30% as stated in the S&P 2008 Corporate Ratings Criteria and are within the 10% to 30% range specified in S&P's U.S. Utilities Ratings Analysis. These are also above the range of 18.0% to 28.0% that APS witness Brandt states that "S&P expects APS to maintain." This suggests that APS does not need any interim rate increase in order to keep its FFO/Debt ratio in a range appropriate for APS' current bond ratings through 2010. In other words, APS does not need any interim rate increase in 2008 or 2009 in order to keep its FFO/Debt ratio within an "investment grade" range. The level of base rate relief in the general rate case will affect APS' FFO/Debt ratio in 2009 and 2010.

The interim rate relief that APS has requested would not necessarily prevent future downgrades of the Company's debt ratings. Factors outside of the Commission's control, such as a sustained unscheduled outage at Palo Verde, could result in an adverse impact on APS's credit ratings, regardless of whether an interim increase is granted.

If APS' debt were to be downgraded to below investment grade status, such an outcome would not be good for either APS or its ratepayers. However, APS has not demonstrated that its requested interim rate increase is necessary in order to do that.

In 2007, the Commission approved an increase to APS' borrowing (Decision No. 69947) and, on August 6, 2008 approved an equity infusion of up to \$400 million from APS' parent, Pinnacle

West (Decision No. 70454). In Docket No. E-01345A-08-0228, PNW indicated that it intended to infuse up to \$400 million into APS in the year 2008. In that docket, APS indicated that it is facing substantial capital needs in 2008 and the foreseeable future and the requested equity investment is necessary to allow APS to maintain current investment grade credit and to improve financial stability. Consequently, by authorizing that equity infusion in Decision No. 70454, the Commission has already provided APS with a means whereby APS and its parent, PNW, can help maintain their current investment grade credit and improve financial stability during the pendency of APS' current general rate case. If APS is truly concerned about its financial ratios, obtaining the equity infusion from PNW sooner, rather than waiting to year-end 2009, would be one step that APS and its parent, PNW, could take to help address their own concerns about APS' financial ratios during the pendency of APS' current general rate case.

Staff's evaluation of APS' financial condition concludes that APS' debt is investment grade. Investment rating agencies such as Standard & Poor's, Moody's and Fitch rank APS' debt as investment grade, and those agencies have listed their outlook for APS and PNW as "stable." Moreover, other key financial metrics for APS appear solid for its business profile. APS' FFO/Debt ratio is currently well within the 15% to 30% range specified by Standard & Poor's for a BBB- rating for a corporation with a "strong" business risk profile and an "aggressive" financial risk profile and within the 10% to 30% range for a U.S. utility with that business and financial risk profile. APS has projected its FFO/Debt ratio to be 23.0% in 2008 even without any interim rate increase. Moreover, as Staff witness Parcell explains, the credit rating agencies look at other financial ratios and information; thus, a temporary dip in one financial metric, APS' FFO/Debt ratio, in 2009 below 18% will not necessarily result in a downgrade. APS and its parent, PNW, can help themselves maintain an FFO/Debt ratio in the "investment grade" range by making the Commission-authorized \$400 million equity infusion into APS sooner, rather than later.

Based on the information provided by APS and the analysis performed by Staff, APS' financial condition appears to be sound enough to not require an interim rate increase during the processing of its general rate case. After the Commission's actions in Decision No. 70454, and based on Staff's analysis and the current time-table for establishing new base rates for APS in the current APS general rate case, APS does not require a \$115 million interim rate increase at this time. The basis for the amount of interim rate increase requested by APS is tied to the approximately 4 mils per kWh of a PSA surcharge that expired in July 2008. Since that surcharge has expired, and has been removed from customer rates as originally intended upon full recovery of the surcharged costs, there is no need to now tie the amount of an interim rate increase to an expired fuel surcharge. Moreover, the amount of interim increase need not, and should not be, tied to the amount of the PSA surcharge that expired in July 2008.

F. An Alternative Basis for Determining an Amount of Interim Rate Increase for APS Should the Commission be Inclined to Grant an Increase

Staff is not recommending an interim rate increase during the pendency of APS' general rate case. If the Commission were inclined to grant APS some amount of interim rate relief, I am advised that it may be necessary for APS to post a bond. In response to Staff Interim 2.74, APS estimates that the cost of a surety bond or a letter of credit would be approximately 1% of the

face value. Thus, granting an interim rate increase may result in an additional cost to APS and its ratepayers related to the cost of the surety bond or letter of credit.

Staff is presenting the Commission with an alternative basis for determining an amount of interim rate increase, should the Commission be inclined to grant one. Staff's alternative is based on the growth in APS' jurisdictional rate base from Decision No. 69663 in APS's last rate case through the end of the test year in the current rate case December 31, 2007 (without pro forma adjustments). Based on the growth in jurisdictional rate base during that period, Staff's alternative would provide an interim rate increase of approximately \$65 million. For comparative purposes, the \$65 million would represent approximately 56.5% of the \$115 million interim rate increase requested by APS.

Any interim rate increase granted to APS should be contingent upon the completion of the \$400 million equity infusion approved by the Commission in Decision No. 70454.

G. Rate Design

APS witness Rumolo's affidavit presents three options for rate design for an interim rate increase:

- 1) Applying the same per kWh charge to all affected customers;
- 2) Applying a fixed percentage of base rates uniformly across all rate schedules; and
- 3) A two-step process, which would first assign the revenue requirement to customer classes (i.e., residential, general service, industrial, etc.) on an energy basis. For customers who are billed on a demand basis, the revenue increase would be converted to a per kW demand charge.

The rate design for an interim increase should be simple and straight-forward to implement and should also facilitate being able to track and verify the revenue produced by the Interim Rate increase in case there is a need to make refunds. If any interim rate increase is granted, Staff recommends that the Interim Base Rate Surcharge use the same per-kWh charge for all affected customers.

INTRODUCTION

Q. Please state your name, position and business address.

A. Ralph C. Smith. I am a Senior Regulatory Consultant at Larkin & Associates, PLLC, 15728 Farmington Road, Livonia, Michigan 48154.

Q. Please describe Larkin & Associates.

A. Larkin & Associates is a Certified Public Accounting and Regulatory Consulting firm. The firm performs independent regulatory consulting primarily for public service/utility commission staffs and consumer interest groups (public counsels, public advocates, consumer counsels, attorneys general, etc.). Larkin & Associates has extensive experience in the utility regulatory field as expert witnesses in over 400 regulatory proceedings including numerous telephone, water and sewer, gas, and electric matters.

Q. Mr. Smith, please summarize your educational background.

A. I received a Bachelor of Science degree in Business Administration (Accounting Major) with distinction from the University of Michigan - Dearborn, in April 1979. I passed all parts of the C.P.A. examination in my first sitting in 1979, received my CPA license in 1981, and received a certified financial planning certificate in 1983. I also have a Master of Science in Taxation from Walsh College, 1981, and a law degree (J.D.) cum laude from Wayne State University, 1986. In addition, I have attended a variety of continuing education courses in conjunction with maintaining my accountancy license. I am a licensed Certified Public Accountant and attorney in the State of Michigan. I am also a Certified Financial Planner™ professional and a Certified Rate of Return Analyst ("CRRRA"). Since 1981, I have been a member of the Michigan Association of Certified Public Accountants. I am also a member of the Michigan Bar Association and the Society of Utility and Regulatory Financial Analysts ("SURFA"). I have also been a member of

1 the American Bar Association ("ABA"), and the ABA sections on Public Utility Law and
2 Taxation.

3
4 **Q. Please summarize your professional experience.**

5 A. Subsequent to graduation from the University of Michigan, and after a short period of
6 installing a computerized accounting system for a Southfield, Michigan realty
7 management firm, I accepted a position as an auditor with the predecessor CPA firm to
8 Larkin & Associates in July 1979. Before becoming involved in utility regulation where
9 the majority of my time for the past 26 years has been spent, I performed audit,
10 accounting, and tax work for a wide variety of businesses that were clients of the firm.

11
12 During my service in the regulatory section of our firm, I have been involved in rate cases
13 and other regulatory matters concerning numerous electric, gas, telephone, water, and
14 sewer utility companies. My present work consists primarily of analyzing rate case and
15 regulatory filings of public utility companies before various regulatory commissions, and,
16 where appropriate, preparing testimony and schedules relating to the issues for
17 presentation before these regulatory agencies.

18
19 I have performed work in the field of utility regulation on behalf of industry, state attorney
20 generals, consumer groups, municipalities, and public service commission staffs
21 concerning regulatory matters before regulatory agencies in Alabama, Alaska, Arizona,
22 Arkansas, California, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana,
23 Kentucky, Louisiana, Maine, Michigan, Minnesota, Mississippi, Missouri, New Jersey,
24 New Mexico, New York, Nevada, North Dakota, Ohio, Pennsylvania, South Carolina,
25 South Dakota, Texas, Utah, Vermont, Washington, Washington D.C., Wisconsin, and

1 Canada as well as the Federal Energy Regulatory Commission and various state and
2 federal courts of law.

3
4 **Q. Have you prepared an attachment summarizing your educational background and**
5 **regulatory experience?**

6 A. Yes. Attachment RCS-1 provides details concerning my experience and qualifications.

7
8 **Q. Have you previously submitted testimony concerning interim or emergency rate**
9 **increases?**

10 A. Yes. I testified in Docket No. E-01345A-06-0009, a request in 2006 by APS for an
11 Emergency Interim Rate Increase.

12
13 **Q. On whose behalf are you appearing?**

14 A. I am appearing on behalf of the Arizona Corporation Commission ("ACC" or
15 "Commission") Utilities Division Staff ("Staff").

16
17 **Q. Have you previously testified before the Arizona Corporation Commission?**

18 A. Yes. I have testified before the Commission previously on a number of occasions.

19
20 **Q. What is the purpose of the testimony you are presenting?**

21 A. The purpose of my testimony is to address the application for an interim rate increase filed
22 by Arizona Public Service Company ("APS" or "Company").

23

1 **Q. Have you prepared any exhibits to be filed with your testimony?**

2 A. Yes. Attachments RCS-2 contains copies of selected APS responses to discovery and
3 other documents that are referenced in my testimony.

4
5 **Q. Please briefly describe the information you reviewed in preparation for your**
6 **testimony.**

7 A. The information I reviewed included APS's application and testimony, APS's responses to
8 data requests of Staff and other parties, information provided to me by Staff, and other
9 publicly available information.

10

11 **Q. What is Staff's recommendation on this matter?**

12 A. Staff recommends that APS' request for an interim rate increase be denied.

13

14 **DISCUSSION OF ISSUES**

15 **Q. What issues are addressed in your testimony?**

16 A. My testimony addresses the following issues:

17

18 A. The Interim Rate Relief Requested by APS

19 B. Criteria for Interim Rate Relief

20 C. Ordinary Regulatory Lag Does Not Justify APS' Requested Interim Rate Relief

21 D. Alleged Emergency Circumstances

22 E. Whether APS Requires an Interim Rate Increase During the Processing of its General
23 Rate Case

24 F. An Alternative Basis for Determining an Amount of Interim Rate Increase for APS
25 Should the Commission be Inclined to Grant an Increase

26 G. Rate Design

27

1 ***A. The Interim Rate Relief Requested by APS***

2 **Q. Please provide some background for the request that APS has made in the current**
3 **proceeding.**

4 A. APS is an Arizona utility providing electricity to more than 1 million customers in 11 of
5 Arizona's 15 counties. With its headquarters in Phoenix, APS is the largest subsidiary of
6 Pinnacle West Capital Corporation ("PWCC" or "PNW"¹).

7
8 APS' current base rates became effective July 1, 2007 pursuant to Decision No. 69663,
9 dated June 29, 2007. That case, Docket No. E-01345A-05-0816 et al, used a test year
10 ending September 30, 2005.

11
12 On March 24, 2008, APS filed with the Commission an application for a base rate
13 increase. On June 2, 2008, APS filed an amended application for a net increase in rates of
14 \$278.2 million, using a test year ending December 31, 2007. The \$278.2 million is
15 composed of a \$264.3 million non-fuel related base rate increase plus a \$13.9 million
16 effective net increase in fuel-related base rates. APS' requested increase in non-fuel base
17 rates includes a \$79.3 million allowance for attrition that purports to measure the impact
18 of regulatory lag through 2010, the first full calendar year that new rates would be in
19 effect. APS proposes to collect up to \$53 million of that attrition amount through a new
20 "hook up" fee that would be applicable to APS customers at a new service location.

21
22 On July 6, 2008, in the instant proceeding, Docket No. E-01345A-08-0172, APS filed a
23 motion for approval of an interim rate. APS is seeking an interim rate increase of
24 approximately \$115 million, or approximately 4 mills per kWh, to be effective with the
25 first billing cycle of November 2008, and subject to refund. APS derived the amount of

¹ PNW is the stock symbol for Pinnacle West Capital and rating agency and investment reports sometimes therefore use "PNW." In this testimony, both abbreviations, PWCC and PNW, are used interchangeably.

1 interim increase with reference to a Power Supply Adjustor surcharge of \$0.003987 per
2 kWh that had been approved in Decision No. 69663 to collect a \$46 million balance of
3 uncollected fuel and purchased power costs. That PSA adjustor expired at the end of the
4 July 2008 billing cycle. APS seeks approval to implement a new Interim Base Rate
5 Surcharge of the same amount, which APS indicates would produce annual revenue of
6 approximately \$115 million. APS' response to Staff Interim 1.13² states that the purpose
7 of the surcharge would be to ameliorate the detrimental impact of the Company's rising
8 non-fuel costs until the Commission has the opportunity to enter an order on the
9 Company's permanent rate request in the underlying general rate case. If granted, any
10 interim rates would be subject to refund with interest, pending the Commission's final
11 decision in APS' general rate case.

12
13 On August 6, 2008, in Decision No. 70454, the Commission approved a request by APS
14 for its parent, PNW, to infuse equity by up to \$400 million. As stated at page 2 of that
15 decision: "PNW indicates that it intends to infuse a total of up to \$400 million into APS
16 in the year 2008, from the proceeds of PNW common stock sales. APS does not
17 anticipate that the \$400 million equity investment will impact APS' cost of service and
18 cost of capital in the foreseeable future. [1] APS currently has a rate case in progress under
19 Docket No. E-01345A-08-0172." At page 3 of Decision No. 70454, the Commission
20 stated that: "Authorization to increase equity by up to \$400 million ... would assist APS'
21 efforts to maintain a balance of cost and financial risk in its capital structure while funding
22 its capital expenditures." At page 4, the Commission approved the requested increase to
23 equity "so long as such equity infusion is made on or before December 31, 2009."
24

² See Attachment RCS-2, page 15.

1 On July 16, 2008, a procedural schedule was established for APS' interim rate request that
2 provides for Staff and intervenor testimony to be filed on August 29, 2008; APS rebuttal
3 on September 8, 2008; and a hearing commencing on September 15, 2008.

4
5 On July 29, 2008, a procedural schedule was established for APS' general rate case, which
6 provides, among other things, for Staff and intervenor direct testimony (other than rate
7 design) to be filed on December 19, 2008; APS rebuttal on February 6, 2009; Surrebuttal
8 on March 6, 2009; APS rejoinder on March 20, 2009; and a hearing commencing on April
9 2, 2009.

10
11 **Q. Please briefly summarize APS' basis for its request for Interim Rates.**

12 A. APS' application at various places³ claims that, from the end of the September 30, 2005,
13 test year used to set the Company's present rates in Decision No. 69663 (6/28/2007) to
14 May 31, 2008, the Company has invested in over \$1.7 billion for new facilities that are not
15 reflected in current rates. APS' response to Staff Interim 1.13⁴ states that the purpose of
16 the surcharge would be to ameliorate the detrimental impact of the Company's rising non-
17 fuel costs until the Commission has the opportunity to enter an order on the Company's
18 permanent rate request in the underlying general rate case.

19
20 APS points to a number of factors as supporting its request for interim rates, including: its
21 inability in recent years to earn its authorized return on equity (ROE); its recent actual and
22 projected net cash flow, which requires access to outside financing; the poor stock price
23 performance of its parent company, Pinnacle West Capital Corporation ("PNW" or
24 "PWCC") compared with other investor-owned utilities; its bond ratings, which APS
25 states are "currently among the lowest they can possibly be without being regarded as

³ See, e.g., page 2, line 16; page 4, line 24; Brandt affidavit, page 5, line 25; etc.

⁴ See Attachment RCS-2, page 15.

1 “junk”; and its Funds From Operations to Debt (“FFO/Debt”) ratio, which APS asserts is
2 the key financial metric examined by the credit rating agencies, and which measures the
3 sufficiency of a company’s cash flow to service both debt interest and debt principal over
4 time. For APS’ present “business profile” category, APS states that Standard & Poor’s
5 expects APS to maintain an FFO/Debt ratio of 18% to 28%.⁵ If no rate increase is granted
6 in the current general rate case, APS projects its FFO/Debt ratio will decline to 17.6% at
7 the end of 2009 and to 16.6% at the end of 2010 under present rates, even with an equity
8 infusion of \$400 million.⁶

9
10 APS claims that the Company’s financial condition will continue to deteriorate during the
11 period of regulatory lag associated with the processing of a general rate case, and the
12 Company will once again be on the brink of a downgrade to junk credit status in 2009
13 before the Commission will likely have ruled on its general rate application.⁷ Pursuant to
14 the Commission’s time clock rules, A.A.C. R14-2-103(B)(11), APS has requested that the
15 rates in its general rate application become effective no later than October 1, 2009.

16
17 ***B. Criteria for Interim Rate Relief***

18 **Q. In general, when is interim rate relief appropriate?**

19 A. In my experience, interim rate increases can be appropriate if the Commission is unable to
20 process a utility’s base rate increase request in a timely manner, if the utility is
21 experiencing an emergency, or if other special circumstances are present. By this
22 statement, I do not mean to address Arizona’s legal requirements for establishing interim
23 rates. I am instead merely providing a layperson’s observations based on my regulatory
24 experience.

⁵ See, e.g., APS witness Brandt’s affidavit at page 12, paragraph 26.

⁶ Id.

⁷ See, e.g., APS witness Brandt’s affidavit, pages 18-19, paragraph 42.

1 **Q. What schedule has been established for the processing of APS' general rate case?**

2 A. A procedural schedule has been established in the general rate case which provides,
3 among other things, for Staff and intervenor direct testimony (other than rate design) to be
4 filed on December 19, 2008 and a hearing commencing on April 2, 2009. The parties are
5 currently expecting that new base rates for APS established in the general rate case could
6 go into effect as early as October 2009.

7
8 **Q. What conditions could constitute an emergency?**

9 A. An emergency could generally include circumstances that threaten or interfere with a
10 Company's ability to provide safe and reliable service, such as insolvency or a sudden,
11 unanticipated occurrence. Some conditions that could constitute a financial emergency
12 include an inability to raise capital at reasonable terms, inability to meet required coverage
13 ratios specified in bond indentures, a cash flow crisis, or an inability to pay current
14 expenses.

15
16 **Q. Is there any indication that the Commission either has been or will be unable to**
17 **process APS' general rate application in a timely manner?**

18 A. No. In fact, we are at the beginning of the process in that proceeding, and I see no reason
19 at this time to expect that it will not be processed according to the established procedural
20 schedule.

21
22 **Q. Has Staff compiled a listing of emergency rate applications before the Commission**
23 **since 1983?**

24 A. Yes. Such a listing was compiled by Staff as Appendix A to Staff's closing brief in Docket
25 No. E-01345A-06-0009, involving an application by APS for an emergency interim rate

1 increase in 2006. For ease of reference I have included that listing in Attachment RCS-2,
2 at pages 37-41.

3
4 **Q. In Docket No. E-01345A-06-0009, what did Staff conclude from its analysis of prior**
5 **applications for emergency rate increases before the Commission?**

6 A. Staff concluded that the question of what qualifies as an emergency is largely an issue of
7 fact for the Commission to decide. In Docket No. E-01345A-06-0009, Staff concluded
8 that the facts in that case did not warrant emergency interim rate relief. The following
9 quote from pages 3-4 of Staff's brief summarizes the evaluation by Staff in that
10 proceeding:

11
12 *Most emergency rate cases before the Commission in the past ten to fifteen*
13 *years involved small water systems facing a crisis of being unable to*
14 *provide adequate and reliable service without an immediate increase in*
15 *rates. Many of the cases involved significant operational and*
16 *maintenance deficiencies. See Decision Nos. 57841 (Mountain View*
17 *Water Company) and 67990 (Sabrosa Water Company). Others involved*
18 *water quality and regulatory compliance issues from other state agencies.*
19 *See Decision Nos. 61833 (Far West Water Company) and 62651 (Thim*
20 *Utility Company, E&T Division). The Commission, however, has also*
21 *denied or partially denied applications for emergency rate relief. See*
22 *Decision Nos. 57668 (E & R Water Company et. al.), 59250 (Mountain*
23 *View Water Company) and 61930 (Vail Water Company). Appendix A*
24 *lists several cases where the Commission has heard emergency interim*
25 *rate relief cases, some of which have been cited above. In the majority of*
26 *those cases where emergency interim rate relief was approved, the crisis*
27 *defined by the company had already occurred or was occurring.*

28
29 ...

30
31 *The evidence in this case is that there is no threat of insolvency or a*
32 *liquidity crisis if APS' request is not granted. (Tr. at 392). APS contends*
33 *that the possible downgrade of its credit rating to junk status is the*
34 *emergency at hand, and that this meets the criteria of an emergency set*
35 *forth in the Arizona Attorney General's Opinion 71-17...Staff does not*
36 *agree with APS that a downgrade is imminent based on what the credit*
37 *rating agencies have stated in their written reports. In other words, a*
38 *sudden change to APS' credit rating appears unlikely...And no evidence*

1 *was presented that APS will not be able to continue providing adequate*
2 *and reliable service before the permanent rate case is resolved. The*
3 *public interest does not necessitate the granting of emergency interim rate*
4 *relief requested by APS.*

5
6 **Q. How does APS' present request for interim rates compare with its 2006 interim rate**
7 **request?**

8 A. The current APS request for an interim rate increase bears some similarities with Docket
9 No. E-01345A-06-0009. Again, APS has focused concern on the potential for a credit
10 ratings downgrade. One key difference between that 2006 APS emergency rate increase
11 request and APS' current request for interim rates is that in Docket No. E-01345A-06-
12 0009 a primary focus was on the operation of APS' Power Supply Adjustor ("PSA")
13 mechanism and the potential under that mechanism, as it existed at that time, for growing
14 deferrals of fuel cost. In APS' current application for interim rates, the operation of the
15 PSA is not a significant concern, as I explain in a subsequent section of my testimony.
16 APS' has instead focused its present request for Interim Rates on the alleged negative
17 impact of regulatory lag as it applies to APS' recovery of plant investment.

18
19 ***C. Ordinary Regulatory Lag Does Not Justify APS' Requested Interim Rate Relief***

20 **Q. What has APS alleged about regulatory lag in relation to its request for interim rate**
21 **relief?**

22 A. APS has raised concerns about the impact of regulatory lag and has claimed that revenues
23 from customer growth are occurring at an insufficient pace, absent periodic rate relief, to
24 keep pace with the costs related to APS' capital investment.

1 **Q. At page 2, lines 16-17, of its application APS has claimed that it has expended \$1.7**
2 **billion for new facilities that are not reflected in current rates. Please discuss APS'**
3 **capital expenditures and how they relate to APS' current rate base.**

4 A. APS' response to Staff Interim 2.96(f) provided a breakout of the \$1.7 billion by type of
5 plant and period.⁸ The \$1.7 billion claimed by APS includes \$297 million of capital
6 expenditures beyond December 31, 2007, the end of the test year in the current rate case.
7 Moreover, the APS capital expenditures do not directly translate into a rate base increase
8 because during the same time frame Accumulated Depreciation, which is an offset to
9 gross plant, is also growing significantly. Consequently, the \$1.7 billion is not an
10 appropriate basis for determining the increase in APS' net plant in service between the end
11 of its last test year and the end of the test year in the pending general rate case. The \$1.7
12 billion, in essence, does not represent the net amount of jurisdictional rate base increase
13 that has been financed by investors. In fact, it significantly overstates that amount.

14
15 **Q. Through December 31, 2007, by how much had APS' rate base grown?**

16 A. Based on a preliminary review of APS' current general rate case application, a comparison
17 between the rate base specified in Decision No. 69663 from APS' last rate case, which had
18 used a test year ending September 30, 2005, through the end of the test year in the current
19 rate case, December 31, 2007 (without pro forma adjustments), APS' jurisdictional rate
20 base has grown by approximately \$538 million.

21
22 **Q. Do these circumstances require that APS should be granted interim rate relief?**

23 A. No. Although these factors should be examined in the general rate case, they do not
24 necessitate interim rate relief within the circumstances of this case. Regulatory lag is an
25 ordinary and anticipated feature of regulation. One of the useful functions of regulatory

⁸ A copy of that response including APS13341 (the response attachment) lists the capital expenditures by plant type by period) is included in Attachment RCS-2, pages 2-10.

1 lag is to place financial responsibility upon the utility for fluctuations in costs between rate
2 cases. The regulatory lag feature of Rate Base/Rate of Return regulation is essential to
3 effective and efficient operation of such a regulatory régime. Because of the lag between
4 placing new plant into service and obtaining rate recognition of such plant, the utility may
5 bear the cost of new plant additions temporarily. This can encourage management to
6 emphasize cost control to a higher degree than might be expected if cost responsibility for
7 plant additions during the periods between rate cases were shifted away from the utility
8 and onto ratepayers. In evaluating plant additions, the Company should conduct a cost-
9 benefit analysis to determine if there is a business case for implementing the plant
10 additions on the time frame budgeted by the Company. If the case is compelling and the
11 project is cost-justified, no additional special ratemaking treatment is needed. If the
12 project is not cost-justified or the benefits are too speculative to warrant the commitment
13 of funds, it may be prudent to delay or avoid the related capital expenditures. These
14 incentives that are currently in place would be lessened if ordinary regulatory lag began to
15 be utilized by Arizona utilities as a justification for interim rate increases. Absent some
16 emergency or other exceptional circumstance, ordinary regulatory lag by itself does not
17 warrant the extraordinary relief of an interim rate increase.
18

19 **Q. Is there merit to APS' claim that its revenues from customer growth are growing at**
20 **an insufficient pace to keep up with the costs of APS' capital investment?**

21 A. There is no way to know for certain without a full rate case investigation. Of course, there
22 is not sufficient time to conduct such a thorough investigation in the timeframes of an
23 interim rate case. It is worth noting that the investigation conducted by Staff in APS' last
24 general rate case, Docket No. E-01345A-05-0816, concluded that there was no merit to
25 APS' allegations that the cost of its customer growth exceeded the revenues generated by
26 that growth. Commission Decision No. 69663 in APS' last rate case refers to the audit

1 performed by Staff and the findings. For instance, at page 61 of that Decision, the last
2 paragraph speaks to the Staff's audit and states in part that "Staff's audit of the Company's
3 current rates shows that the non-fuel costs are being recovered, contrary to APS' claim
4 that the cost of customer growth is greater than the revenues generated by that growth."
5

6 **Q. Has APS raised similar issues with respect to regulatory lag in its current general**
7 **rate case?**

8 A. Yes. APS has raised issues associated with regulatory lag in its pending general rate case
9 and has claimed that revenue increases resulting from customer growth are unable to keep
10 pace with costs related to APS' capital spending. For example, APS has asked for an
11 attrition adjustment of \$79.3 million related to regulatory lag.
12

13 **Q. Does Staff intend to examine issues raised by APS with regard to regulatory lag in**
14 **the general rate case?**

15 A. Yes. Staff has not completed its detailed review of APS' base rate application;
16 nonetheless, Staff is not at this time convinced that APS' requested attrition adjustment is
17 appropriate. Moreover, Staff believes that such issues can be best addressed in the context
18 of the general rate case and that ordinary regulatory lag, by itself, does not necessitate an
19 interim increase while that case is being processed.
20

21 ***D. Alleged Emergency Circumstances***

22 **Q. What emergency circumstances has APS alleged?**

23 A. Pages 18-19 of APS witness Brandt's affidavit claims that: "... notwithstanding proactive
24 efforts from the Company and Pinnacle West, APS' credit metrics will fall into junk credit
25 range during the course of the Company's rate proceedings, before the Commission is
26 likely to grant the much-needed rate relief. I firmly believe that the Company will more

1 than likely be downgraded to junk during the pendency of the general rate case
2 proceedings without interim relief.” In response to Staff Interim 2.97, APS stated that:
3 “While the Company hopes that it is able to continue to provide safe and reliable electric
4 service to customers in 2008 and 2009 and intends to do so, the Company’s interim base
5 rate request is intended to support its overall financial health so that its ability to offer
6 reliable electric service will not be jeopardized in the future.”⁹

7
8 **Q. Is APS currently experiencing an “emergency”?**

9 A. No. APS has not identified any sudden or unanticipated circumstance affecting its ability
10 to offer reliable electric service that would justify an interim rate increase.

11
12 **Q. Has APS demonstrated that it cannot continue to provide safe, reasonable and**
13 **adequate service without an interim rate increase?**

14 A. No. Staff Interim data request 2.97¹⁰ asked APS: “Without any interim rate increase, will
15 APS be able to provide safe and reliable electric service to its customers in 2008 and
16 2009? If not, explain fully why not.” APS’ response stated that:

17
18 *While the Company hopes that it is able to continue to provide safe and*
19 *reliable electric service to its customers in 2008 and 2009 and intends to*
20 *do so, the Company’s interim base rate request is intended to support its*
21 *overall financial health so that its ability to offer reliable electric service*
22 *will not be jeopardized in the future.*

23
24 Unless there are unanticipated unforeseen events that occur during that time frame, the
25 information reviewed by Staff would indicate that APS should be able to continue to
26 provide safe, reasonable and adequate service without an interim rate increase while the
27 APS general rate case is being processed.

⁹ A copy of that response is reproduced in Attachment RCS-2, page 48.

¹⁰ See Attachment RCS-2 at page 48.

1 **Q. Is APS currently experiencing a “financial emergency”?**

2 A. No. APS is not currently experiencing a financial emergency. Staff’s analysis reveals that
3 APS has been and continues to be able to obtain financing. As explained in my and Staff
4 witness Parcell’s testimonies, APS is not currently experiencing a financial crisis and is
5 not facing a cash flow emergency. As acknowledged in response to Staff Interim 2.76,
6 without interim rates, APS does not believe it would be facing a cash flow emergency in
7 2008 or 2009. APS’ response to that request¹¹ states: “No. The Company has \$900
8 million in committed credit facilities available to it through 11/2010.”
9

10 **Q. What are APS’ current bond ratings?**

11 A. APS’ response to data request Staff Interim 2.50¹² (among others) shows that APS’
12 current long term debt ratings are:

13
14 S&P: BBB-
15 Moody’s: Baa2
16 Fitch: BBB
17

18 **Q. Does a downgrade of APS’ credit rating appear imminent or probable during the**
19 **processing of APS’ general rate case?**

20 A. No.
21

22 **Q. Has Standard & Poor’s discussed how APS’ rating of BBB- relates to certain**
23 **financial performance metrics?**

24 A. Yes. This is discussed by S&P on the second page of its January 24, 2006 report.¹³ APS’
25 filing and testimony suggest that one particular financial metric, funds from operation as a

¹¹ See Attachment RCS-2, page 33.

¹² See Attachment RCS-2, page 12.

¹³ See Attachment RCS-2, pages 16-18.

1 percent of total debt ("FFO/Debt"), would cause the rating agencies to downgrade its
2 credit standing to "junk" status.¹⁴ However, while FFO/Debt is an important metric, this
3 one measure by itself is not determinative of a bond rating. The January 24, 2006, S&P
4 report, for example, explains that:

5
6 *FFO to total debt is an important metric for Standard & Poor's, and at a*
7 *business profile of '6' (on a 10-point scale where '1' is excellent and '10'*
8 *vulnerable), it reflects a below-investment-grade performance. For the 12*
9 *months ending Sept. 30, 2005, FFO interest coverage was 3.3x, which is*
10 *reasonable for the current rating. Adjusted total debt to total*
11 *capitalization was 53.1% and is solid for the current rating.*

12
13 Thus, S&P reviews a number of financial metrics in the analytical process of establishing
14 its ratings, and APS' other ratios, such as FFO interest coverage and debt to total
15 capitalization, were found to be reasonable or solid for the current rating. Staff witness
16 Parcell presents additional discussion regarding credit rating agency use of financial
17 metrics in his prefiled Direct Testimony.

18
19 A more current S&P Ratings Direct report, dated June 25, 2008¹⁵, indicated, among other
20 things, that:

21
22 *Standard & Poor's Rating Services today affirmed the 'BBB-' corporate*
23 *credit rating assigned to Pinnacle West Capital Corporation (PWCC) and*
24 *its utility, Arizona Public Service. The outlook is stable. The consolidated*
25 *credit ratings of PWCC primarily reflect the operations of its largest*
26 *subsidiary, APS, a regulated, electric utility serving about 1.1 million*
27 *customers within its service territory, which spans roughly two-thirds of*
28 *Arizona and includes about half of the Phoenix MSA. We view the*
29 *business profile of PWCC and APS to be 'strong'. While the company*
30 *continues to benefit from a number of favorable attributes including a*
31 *good service territory, a reasonably balanced power supply portfolio and*

¹⁴ See, e.g., APS' Application at pages 6-7.

¹⁵ APS13070, Attachment RCS-2, pages 19-23.

1 a good PSA. However, APS' continues to face significant regulatory
2 challenges.

3
4 ...

5
6 We view the financial profile of PWCC and APS to be 'aggressive', which
7 reflects: year-end debt to total capitalization of 57% (adjusted for items
8 such as power purchases and operating leases); heavy capital spending
9 that is expected to drive negative free operating cash flow for the
10 foreseeable future; cash flow weakness as a function of protracted rate
11 cases; and, while modest, the presence of unregulated activities, which
12 can be unpredictable in their earnings contributions.

13
14 Because the preponderance of cash flows for consolidated operations
15 stems from APS, we expect financial performance will continue to be
16 heavily dependent on regulatory outcomes. The conclusion of APS' last
17 general rate case in June 2007 (filed in November 2005 and revised in
18 early 2006) provided the company with mechanisms to recover legacy
19 deferrals and speed the recovery of fuel costs going forward. This rate
20 relief, in place for the last half of 2007, assisted the company in
21 maintaining credit metrics roughly in line with past performance. Funds
22 from operation (FFO) to total debt was about 16% at year-end, with FRO
23 interest coverage around 4x. On a trailing 12-month basis the company's
24 performance has been slightly above these levels, due in part to the
25 federal tax stimulus package approved by the U.S. Congress earlier this
26 year, which is expected to increase deferred taxes (which is added back to
27 FFO and this increase this total).

28
29 We expect APS to be in more or less continuous rate case mode for the
30 next few years. Given APS' capital spending program, forecasted to be
31 about \$1.1 billion annually through 2010, the utility will need to file
32 regular general rate cases to manage recovery of its investment. The use
33 of a historical test year in Arizona, coupled with the fact that fully litigated
34 rate cases take between 18 to 24 months to complete, is expected to result
35 in no meaningful improvement in financial performance through 2009 and
36 possibly beyond, depending on the timing and the outcome of the
37 company's current rate case.

38
39 A complete copy of that S&P report is included in Attachment RCS-2, pages 19-23, to my
40 testimony. Additionally, a complete copy of Standard & Poor's 2008 Corporate Ratings

Criteria¹⁶ is included in Attachment RCS-3, and a copy of S&P's Ratings Direct, "U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix" dated 11/30/2007 is included in Attachment RCS-2, at pages 61-64.

Q. What "financial risk indicative ratios" are listed in Standard & Poor's 2008 Corporate Ratings Criteria, for a utility, such as APS, with an "aggressive" financial risk profile?

A. Referring to Attachment RCS-3, page 20 lists the ranges of financial risk indicative ratios for a corporation or a U.S. utility, such as APS, with a business risk profile of "strong" and a financial risk profile of "aggressive." A similar listing of ranges indicated by S&P for U.S. Utilities appears in Attachment RCS-2, page 63. The ranges listed by S&P for the applicable "financial risk indicative ratios" are:

S&P 2008 Corporate and U.S. Utilities Ratings Criteria		U.S.
Financial Risk Indicative Ratios*	Corporate[1]	Utilities[2]
BBB- Range		
Cash flow (funds from operations/Debt) %	15-30	10-30
Cash flow (FFO/interest) (times)		2.0-3.5
Debt leverage (Total debt/Capital) %	45-55	45-60
Debt/EBITDA (times)	3.0-4.5	
*Fully adjusted, historically demonstrated, and expected to continue consistently Business risk profile "solid"; financial risk profile "aggressive"		
[1] Standard & Poor's 2008 Corporate Ratings Criteria		
[2] Source: Standard & Poor's Ratings Direct, 11/31/2007; U.S. Utilities Ratings Analysis Now Portrayed in the S&P Corporate Ratings Matrix		

¹⁶ A copy of that report was provided by APS in response to Staff Interim 2.82, and has been identified by APS as "APS12977".

Q. Has APS provided information on what impact various levels of interim and permanent rate increases would have on its FFO/Debt ratio?

A. Yes. Staff data requests 2.59 and 2.60¹⁷ asked APS to run various scenarios of interim and permanent rate increases, and to calculate the impact on its FFO/Debt ratio, among other things. The following table summarizes those results from APS' second supplemental response to Staff Interim 2.59¹⁸:

APS Calculated FFO/Adjusted Total Debt Under Various Scenarios

Case #	Description[a]	Estimated FFO/Adjusted Total Debt		
		2008	2009	2010
1	100% of \$115M Interim Nov'08, 100% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.3%	20.7%	21.3%
2	100% of \$115M Interim Nov'08, 50% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.3%	20.2%	18.9%
3	50% of \$115M Interim Nov'08, 100% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.2%	19.9%	21.0%
4	50% of \$115M Interim Nov'08, 50% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.2%	19.4%	18.7%
5	No \$115M Interim Nov'08, 100% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.0%	19.1%	20.8%
6	No \$115M Interim Nov'08, 50% of Non-Fuel Base Rate Increase 10/1/09 (5%)	23.0%	18.7%	18.5%
7	50% of \$115M Interim Nov'08, 75% of Non-Fuel Base Rate Increase 10/1/09 (7.5%)	23.2%	19.7%	19.8%
8	50% of \$115M Interim Nov'08, 25% of Non-Fuel Base Rate Increase 10/1/09 (2.5%)	23.2%	19.2%	17.6%
9	No \$115M Interim Nov'08, 75% of Non-Fuel Base Rate Increase 10/1/09 (7.5%)	23.0%	18.9%	19.7%
10	No \$115M Interim Nov'08, 25% of Non-Fuel Base Rate Increase 10/1/09 (2.5%)	23.0%	18.4%	17.4%

Notes

[a] All case scenarios shown in this table also reflect an assumed fuel-related increase effective 10/1/09 (7%)

As shown in the above table, with no interim increase and assuming 50% of its base rate increase is granted with rates effective October 1, 2009, APS' FFO/Debt ratio is expected to be 23.0% in 2008, 18.7% in 2009, and 18.5% in 2010, all of which are within Standard & Poor's BBB- "investment grade" range for a company with APS' business and financial

¹⁷ See Attachment RCS-2, pages 57 and 60, respectively.

¹⁸ A copy of that response and the "Case Summaries" attachment from that response is included in Attachment RCS-2, pages 58-59. APS's full response also included additional detailed calculations for amounts contained in the "Case Summaries."

1 risk profile of 15% to 30% as stated in the S&P 2008 Corporate Ratings Criteria¹⁹ and are
2 within the 10% to 30% range specified in S&P's U.S. Utilities Ratings Analysis.²⁰ These
3 are also above the range of 18.0% to 28.0% that APS witness Brandt states that "S&P
4 expects APS to maintain."²¹ This suggests that APS does not need any interim rate
5 increase in order to keep its FFO/Debt ratio in a range appropriate for APS' current bond
6 ratings through 2010. In other words, APS does not need any interim rate increase in
7 2008 or 2009 in order to keep its FFO/Debt ratio within an "investment grade" range. The
8 level of base rate relief in the general rate case will affect APS' FFO/Debt ratio in 2009
9 and 2010.

10
11 **Q. Would the interim rate relief that APS has requested necessarily prevent future**
12 **downgrades of the Company's debt ratings?**

13 **A. No.**
14

15 **Q. Are there other factors or events that could cause future downgrades of the**
16 **Company's debt ratings?**

17 **A.** There are at least two reasons why the interim and refundable rate relief that APS has
18 requested would not necessarily prevent future downgrades of the Company's debt
19 ratings. First, any interim rate increases granted in this proceeding would be subject to
20 refund. If it is ultimately refunded, temporary refundable rate relief would thus only tend
21 to postpone, and not prevent, further bond downgrades. Second, other factors, such as a
22 sustained, unscheduled outage at the Palo Verde nuclear plant or one of APS' coal-fired
23 generating facilities during a peak demand period could result in a downgrading. For
24 example, Fitch's January 30, 2006 report²² mentions the operational risk and asset

¹⁹ See Attachment RCS-3, APS12977, page 20 of 107.

²⁰ See Attachment RCS-2, page 63.

²¹ See Brandt June 6, 2008 affidavit, page 12, line 11.

²² Provided in response to Staff interim 2.50 and included in Attachment RCS-2, at pages 24-25.

1 concentration of the Palo Verde nuclear plant as a concern and states that: "The facility
2 has experienced intermittent operating problems over the past year and a sustained,
3 unscheduled outage at the plant could lead to further negative rating actions."
4

5 **Q. Would APS' requested interim rate relief likely result in a bond rating upgrade?**

6 A. No. APS' requested interim rate relief would not likely result in a bond rating upgrade.
7 An interim rate increase is not anticipated to result in an upgrade of APS' debt ratings.
8 Nor does APS believe that its requested base rate increase would result in upgraded credit
9 ratings. APS witness Brandt's direct prefiled testimony at page 67, indicates that APS'
10 base rate increase request of \$278.2 million of net revenues in the pending general rate
11 case "will only allow the Company to maintain its current BBB- rating through at least
12 2010, requiring additional rate filings thereafter as APS' spending needs continue and rise
13 and the threat of downgrade to junk persists." Moody's July 28, 2008 Credit Opinion²³
14 stated: "APS' rating is not likely to be revised upward in the near-to-medium term."
15 Standard & Poor's June 25, 2008 Ratings Direct²⁴ concluded "we see little potential for
16 positive movement in the ratings outlook." Consequently, an upgrade of APS' debt
17 ratings is not anticipated.
18

19 Staff Interim 2.56 asked APS to: "Provide all quantitative analysis that APS has
20 concerning the amount of additional annual revenues it would take to raise its bond rating
21 up by one step."²⁵ APS' response states:

22
23 *APS has not prepared such quantitative analyses. The Company's interim*
24 *rate request and general rate case request are both needed in order to*
25 *maintain current ratings levels and would not, in and of themselves, raise*
26 *its ratings by any degree.*

²³ APS13051, at page 5 of 6; a copy is reproduced in Attachment RCS-2, pages 42-27.

²⁴ APS13070, at page 4 of 5, a copy is reproduced in Attachment RCS-2, pages 19-23.

²⁵ See Attachment RCS-2, page 26.

1 As explained elsewhere in my testimony and in additional detail in the testimony of Staff
2 witness Parcell, a particular FFO to Debt ratio does not, of itself, dictate a bond rating.
3 Moreover, as shown in Attachment RCS-2, pages 19-23, Standard & Poor's most recent
4 report, dated June 25, 2008, acknowledges that: "The use of a historical test year in
5 Arizona, coupled with the fact that fully litigated rate cases take between 18 to 24 months
6 to complete, is expected to result in no meaningful improvement in financial performance
7 through 2009 and possibly beyond, depending on the timing and the outcome of the
8 company's current case." In that report, S&P lists the outlook for APS as "stable" with the
9 following explanation:

10
11 *The stable outlook reflects our expectation that consolidated cash flow*
12 *volatility has been tamped down by the ACC's approval of a stronger PSA*
13 *that speeds recovery of fuel costs, but consolidated financial performance*
14 *will continue to be challenged by regulatory lag at APS, which could be*
15 *moderated by APS' pending interim rate request. The stable outlook is*
16 *premised on no meaningful adverse changes in the company's business*
17 *risks and continued financial performance that is not significantly weaker*
18 *than 2007 results. Equity issuances will be expected to balance the*
19 *capital structure of the company as APS continues to invest heavily in*
20 *infrastructure. Ratings could be lowered to speculative grade if the*
21 *company is not able to overcome the challenge of ensuring timely*
22 *recovery of its prudently incurred costs through rate increases approved*
23 *by the ACC. Given these challenges, and that presented by NRC scrutiny*
24 *of Palo Verde, we see little potential for positive movement in the ratings*
25 *or outlook.*

26
27 **Q. Has APS' debt been downgraded to "junk" status?**

28 **A.** No. APS' debt is still investment grade.
29

1 **Q. Has APS identified how its financing costs could increase if its credit rating were**
2 **downgraded to below investment grade status?**

3 A. Yes. APS' response to Staff Interim 2.55 has identified \$443.9 million to \$889.5 million
4 of total increased interest cost for the ten-year period 2010 through 2019 associated with a
5 below investment grade debt rating, but Staff has not verified these numbers.²⁶
6

7 **Q. How are a utility's interest costs charged to ratepayers?**

8 A. In general, a utility's financing costs for debt are reflected in the weighted cost of debt in
9 the capital structure. The debt cost is multiplied by the jurisdictional rate base and
10 ratepayers pay for the interest cost as one of the components of the utility's cost of capital.
11 Depending on how the utility accounts for them, some borrowing costs, such as bank fees,
12 may be included in operating expenses.
13

14 **Q. Has APS issued debt since its bond rating was downgraded from BBB to BBB- by**
15 **Standard & Poor's?**

16 A. Yes. As indicated in APS' response to Staff Interim 2.71²⁷, APS has issued \$400 million
17 of long-term debt since S&P downgraded it to BBB- on December 21, 2005.
18

19 **Q. Was the cost of that debt higher than if APS had maintained a BBB bond rating**
20 **from S&P?**

21 A. Yes. APS' response to Staff Interim 2.71(b)²⁸ states that:

22
23 *If APS had had a bond rating of BBB at the time the amount referred to in*
24 *subpart (a) was issued the coupon on these two tranches would have been*
25 *approximately 6.20% and 6.825% respectively. This would have resulted*

²⁶ A copy of that response is included in Attachment RCS-2, pages 27-30.

²⁷ A copy of that response is included in Attachment RCS-2, page 31.

²⁸ Id.

1 *in interest expense savings of \$1.25 million and \$2.25 million over the life*
2 *of the bonds.*

3
4 **Q. If APS' annual borrowing costs increase by \$1 million, would that necessarily result**
5 **in \$1 million of additional annual financing costs to ratepayers?**

6 A. No. However, if a utility's borrowing costs increase, eventually ratepayers may be
7 required to pay for some portion of the increased costs when they are recognized in a rate
8 case.

9
10 **Q. Would a downgrading of APS' debt to "junk" status be a desirable outcome?**

11 A. No, it would not.

12
13 **Q. Does it appear imminent or probable that APS' debt will be downgraded to "junk"**
14 **status if the \$115 million interim rate increase requested by APS is not granted?**

15 A. No, it does not. APS' debt is still investment grade and the three credit rating agencies
16 have listed their outlook for APS and PNW as "stable." See Attachment RCS-2 for copies
17 of recent credit rating agency reports.

18
19 **Q. Have any credit rating agencies announced that APS' debt would be downgraded if**
20 **APS' request for interim rates were to be denied?**

21 A. According to APS' response to data request Staff Interim 2.27(b)²⁹ none have.
22

²⁹ A copy of that response is included in Attachment RCS-2, page 32.

1 **Q. Has APS provided proof that granting its requested interim rate increase of \$115**
2 **million would result in a cost savings to ratepayers?**

3 A. No. Avoiding a downgrading to “junk” status would save ratepayers significant amounts
4 of future financing costs; however, APS has not demonstrated that its requested interim
5 rate increase is necessary in order to do that.

6
7 **Q. Has APS defaulted on any bond indenture or credit arrangements?**

8 A. APS has indicated no. The response to Staff Interim 2.39³⁰ states that:

9
10 *There are two provisions in APS’ credit arrangements that address*
11 *minimum financial ratios. The first one is the requirement that APS*
12 *maintain an Interest Coverage of at least two times, and the second one*
13 *requires that the amount of debt does not exceed 65% of total*
14 *capitalization.*

15
16 That response also lists events of default. Notably, APS’ application or testimony does
17 not claim that a default has occurred. Nor do APS’ responses to Staff data requests or the
18 APS SEC filings that I have reviewed indicate that a default has occurred. A default
19 would tend to be a “significant event” and would thus require reporting by APS and its
20 parent company on SEC filings.

21
22 **Q. Has the Commission approved increases to APS’ borrowing and equity?**

23 A. Yes. In 2007, the Commission approved an increase to APS’ borrowing (Decision No.
24 69947) and, on August 6, 2008 approved an equity infusion of \$400 million from APS’
25 parent, Pinnacle West (Decision No. 70454).

26

³⁰ See Attachment RCS-2, page 14.

1 **Q. How has S&P described APS' short and long-term borrowing?**

2 A. As recognized in Standard & Poor's June 25, 2008 Ratings Direct³¹:

3
4 *In October 2007, APS received approval from ACC to increase its*
5 *authorized short-term debt borrowing capacity by \$500 million, and long-*
6 *term debt borrowing capacity by \$1 billion. This will help address the*
7 *needs of a growing customer base, and the increasing requirement for*
8 *natural gas and purchased power.*

9
10 In that report, S&P also observed that:

11
12 *APS had \$682 million available under its two unsecured revolving credit*
13 *facilities, \$400 million of which expires in December 2010, and \$500*
14 *million in September 2011.*³²
15

16 Concerning its expectations for APS' cash flow and the maturing of debt obligations, S&P
17 further observed that:

18
19 *Discretionary cash flow is expected to be negative for 2008 due to APS' capital*
20 *expenditure plans. Excluding the remarketing of APS' pollution control debt,*
21 *neither PWCC nor APS has any significant debt obligations maturing until 2011.*³³
22

23 **Q. In 2007 and 2008, did APS experience difficulties in issuing commercial paper?**

24 A. Yes. Due to the volatility in the credit markets resulting from the sub-prime mortgage
25 crisis, APS' ability to issue commercial paper was impacted in August and December
26 2007.³⁴ As stated in APS' response to Staff Interim 2.24(b), throughout 2008 APS' ability
27 to issue commercial paper was also impacted.
28

³¹ APS13070, at page 4 of 5; see Attachment RCS-2, pages 19-23, for a complete copy.

³² Id.

³³ Id.

³⁴ See Attachment RCS-2, page 34 and page 13, paragraph 29 of APS witness Brandt's June 6, 2008, affidavit.

1 **Q. Despite not being able to issue commercial paper, was APS able to obtain short term**
2 **borrowings in 2007 and 2008?**

3 A. Yes. APS' response to Staff Interim 2.24 states that in each instance, APS borrowed
4 under its revolving credit facilities which currently have similar pricing to commercial
5 paper.

6
7 **Q. Has the Commission also recently authorized APS' parent, PNW, to infuse additional**
8 **equity into APS?**

9 A. Yes. The Commission's action on August 6, 2008 in Decision No. 70454 authorizes APS'
10 parent, PNW, to infuse a total up to \$400 million of equity into APS. In Docket No. E-
11 01345A-08-0228 PNW indicated that it intended to infuse up to \$400 million into APS in
12 the year 2008.

13
14 **Q. What was the stated basis for approving that equity infusion?**

15 A. In that docket, APS indicated that it is facing substantial capital needs in 2008 and the
16 foreseeable future and the requested equity investment is necessary to allow APS to
17 maintain current investment grade credit and to improve financial stability. Consequently,
18 by authorizing that equity infusion in Decision No. 70454, the Commission has already
19 provided APS with a means whereby APS and its parent, PNW, can help maintain their
20 current investment grade credit and improve financial stability during the pendency of
21 APS' current general rate case.

22
23 **Q. When does APS anticipate the equity infusion from PNW to occur?**

24 A. APS' response to Staff Interim 2.19(a)³⁵ states: "We expect PNW to issue up to \$400
25 million of equity before year-end 2009 and immediately infuse the proceeds into APS."

³⁵ A copy of that response is included in Attachment RCS-2, page 35.

1 **Q. Does the timing of the infusion affect APS' financial ratios, such as FFO/Debt?**

2 A. Yes. As explained in APS' response to Staff Interim 2.19(b): "The debt level will
3 increase if there is no equity infusion which will decrease FFO/Debt by approximately
4 2%. Attached as APS13333 is an approximation of the FFO/Debt impact."³⁶ If APS is
5 truly concerned about its financial ratios, obtaining the equity infusion from PNW sooner,
6 rather than waiting to year-end 2009, would be one step that APS and its parent, PNW,
7 could take to help address their own concerns about APS' financial ratios during the
8 pendency of APS' current general rate case.

9
10 **Q. Please summarize Staff's evaluation of APS' financial condition.**

11 A. APS' debt is investment grade. Investment rating agencies such as Standard & Poor's,
12 Moody's and Fitch rank APS' debt as investment grade, and those agencies have listed
13 their outlook for APS and PNW as "stable." Moreover, other key financial metrics for
14 APS appear solid for its business profile. APS' response to Staff Interim 2.50 at
15 APS13014³⁷ shows that APS' current long-term debt ratings are:

16
17 S&P: BBB-
18 Moody's: Baa2
19 Fitch: BBB

20
21 Moreover, APS' FFO/Debt ratio is currently well within the 15% to 30% range specified
22 by Standard & Poor's for a BBB- rating for a corporation with a "strong" business risk
23 profile and an "aggressive" financial risk profile³⁸ and within the 10% to 30% range for a
24 U.S. utility with that business and financial risk profile.³⁹ APS has projected its FFO/Debt

³⁶ See APS13333 at Attachment RCS-2, page 36.

³⁷ See Attachment RCS-2 at page 12.

³⁸ See Attachment RCS-3 at page 20.

³⁹ See Attachment RCS-2 at page 63.

1 ratio to be 23.0% in 2008 even without any interim rate increase.⁴⁰ Moreover, as Staff
2 witness Parcell explains, the credit rating agencies look at other financial ratios and
3 information; thus, a temporary dip in one financial metric, APS' FFO/Debt ratio, in 2009
4 below 18% will not necessarily result in a downgrade. APS and its parent, PNW, can help
5 themselves maintain an FFO/Debt ratio in the "investment grade" range by making the
6 Commission-authorized \$400 million equity infusion into APS sooner, rather than later.⁴¹
7

8 ***E. Whether APS Requires an Interim Rate Increase During the Processing of its General Rate***
9 ***Case***

10 **Q. Does APS need an interim rate increase during the processing of APS' general rate**
11 **case?**

12 A. No. Based on the information provided by APS and the analysis performed by Staff,
13 APS' financial condition appears to be sound enough to not require an interim rate
14 increase during the processing of its general rate case.
15

16 **Q. Does the operation of the Power Supply Adjustor provide a justification for granting**
17 **interim rate relief during the processing of APS' general rate case?**

18 A. No. Unlike APS' request for an emergency rate increase in 2006, APS' current request for
19 interim rates is driven not by issues related to the collection of fuel and purchased power
20 costs, but by other factors. Indeed, APS witness Brandt's direct testimony, at page 6,
21 acknowledges that Decision No. 69663 (6/29/2007) went a long way towards solving
22 much of the Company's fuel cost recovery problem. Standard and Poor's, as recently as
23 June 25, 2008, commented that APS "continues to benefit from a number of favorable
24 attributes including a good service territory, a reasonably balanced power supply portfolio

⁴⁰ See Attachment RCS-2, at pages 36 and 58-59.

⁴¹ See, e.g., Attachment RCS-2 at page 36.

1 and a good PSA.”⁴² My review of the evidence to date indicates that the operation of
2 APS’ PSA is not contributing to any compelling need for an interim rate increase in the
3 current proceeding.
4

5 **Q. Do APS concerns about regulatory lag provide a justification for granting interim**
6 **rate relief during the processing of APS’ general rate case?**

7 A. APS has raised allegations about the negative impacts of regulatory lag. Specifically, APS
8 claims that its revenues from customer growth are growing at an insufficient pace, absent
9 periodic rate relief, to keep pace with the costs related to its capital investment. Of course,
10 as discussed above, there is no reliable way to evaluate this claim in the context of an
11 interim rate case because a thorough rate case investigation cannot be completed in the
12 allotted timeframe. Furthermore, the investigation conducted by Staff in APS’ last rate
13 case, Docket No. E-01345A-05-0816, concluded that APS’ claims in this regard (*i.e.*, that
14 the cost of customer growth was greater than the revenues generated by that growth,
15 thereby causing the Company’s rates to be inadequate) were not supported by the
16 evidence.⁴³ This does not mean that Staff’s investigation will reach the same result in the
17 current general rate case; nonetheless, it is important to bear in mind that the Company’s
18 allegations are not always borne out by the investigation results.
19

20 Even if a full rate case investigation could be completed within the available timeframe of
21 the interim case, ordinary regulatory lag is not the sort of circumstance that, by itself,
22 would justify interim rate relief.
23

⁴² Standard & Poor’s Ratings Direct, June 25, 2008, Arizona Public Service Co., APS13070, provided in response to Staff Interim 2.6, included in Appendix RCS-2 at pages 19-23

⁴³ See, e.g., Staff’s reply brief (2/16/2007) at pages 7-10; also see Decision No. 69663 at pages 49-68.

1 **Q. Has APS demonstrated that, without an interim rate increase, its financial status**
2 **would be impaired, or that it would otherwise be prevented from attracting capital at**
3 **fair and reasonable terms?**

4 A. No. Unless there are unanticipated unforeseen events that occur during that time frame,
5 the information reviewed by Staff would indicate that APS' financial status would not be
6 impaired and that APS should be able to continue to attract capital at fair and reasonable
7 terms while the APS general rate case is being processed.

8
9 **Q. Has APS proved that a \$115 million interim rate increase is needed at this time?**

10 A. No. APS has not demonstrated that its requested interim rate relief would:

- 11
- 12
 - prevent future downgrades of APS' debt ratings
- 13
 - result in an upgrade of APS' debt ratings
- 14
 - result in lower long-term costs for their customers, or
- 15
 - be appropriate under the circumstances.
- 16

17 **Q. Should the \$115 million of interim relief requested by APS be granted?**

18 A. No. After the Commission's actions in Decision No. 70454, and based on Staff's analysis
19 and the current time-table for establishing new base rates for APS in the current APS
20 general rate case, APS does not require a \$115 million interim rate increase at this time.

21
22 ***F. An Alternative Basis for Determining an Amount of Interim Rate Increase for APS Should***
23 ***the Commission be Inclined to Grant an Increase***

24 **Q. Is Staff presenting the Commission with an alternative basis for determining an**
25 **amount of interim rate increase for APS?**

26 A. Yes. While Staff is not recommending an interim rate increase during the pendency of
27 APS' general rate case, and Staff is not recommending any interim increase, Staff is

1 presenting the Commission with an alternative basis for determining an amount of interim
2 rate increase, should the Commission be inclined to grant one.

3
4 **Q. Please describe the basis for Staff's alternative recommendation.**

5 A. Staff's alternative is based on the growth in APS' jurisdictional rate base from Decision
6 No. 69663 in APS's last rate case through the end of the test year in the current rate case
7 December 31, 2007 (without pro forma adjustments). Based on the growth in
8 jurisdictional rate base during that period, Staff's alternative would provide an interim rate
9 increase of approximately \$65 million. For comparative purposes, the \$65 million would
10 represent approximately 56.5% of the \$115 million interim rate increase requested by
11 APS.

12
13 **Q. What test year is being used in APS' current general rate case?**

14 A. A test year ending December 31, 2007 is being used in the rate case.

15
16 **Q. What test year was used in APS' last general rate case?**

17 A. A test year ending September 30, 2005 was used in APS' last rate case, Docket No. E-
18 01345A-05-0816 et al.

19
20 **Q. Has APS added net plant in service and increased its jurisdictional rate base after its**
21 **last rate case through December 31, 2007?**

22 A. Yes.
23

1 **Q. How does the jurisdictional rate base for APS approved in Decision No. 69663**
2 **compare with APS' unadjusted jurisdictional rate base at December 31, 2007, as**
3 **filed by APS in the current general rate case?**

4 A. In Decision No. 69663, the Commission determined that APS' jurisdictional adjusted
5 original cost rate base was \$4.403 billion. In the current rate case, APS' filing at Schedule
6 B-1, page 1, Column D, shows an unadjusted jurisdictional rate base of \$4.941 billion.
7 Based on the change in jurisdictional rate base from Decision No. 69663 through
8 December 31, 2007, the end of the test year, this is an increase of approximately \$538
9 million.

10
11 **Q. Has Staff completed its verification of the unadjusted jurisdictional rate base at**
12 **December 31, 2007, as filed by APS in the current general rate case?**

13 A. No. Staff is in the early process of reviewing APS' general rate case filing. As part of the
14 initial review, we have begun tracing the amounts of unadjusted rate base on APS'
15 Schedule B-1 to the source documents, such as the Company's audited financial
16 statements and supporting documentation; however, that process has not yet been
17 completed. Staff has issued a number of data requests to APS to help facilitate this
18 verification process.

19
20 **Q. Has Staff reviewed APS' general rate increase filing in sufficient detail at this point**
21 **to determine approximately what amount of permanent increase Staff would be**
22 **recommending?**

23 A. No. Not at this time. Staff's consultants, including myself, have just recently commenced
24 the analysis of APS' general rate case filing. Staff anticipates having that analysis
25 completed by the filing date specified in the general rate case for Staff's filing of direct

1 testimony on revenue requirements. According to the current schedule, that date is
2 December 19, 2008.

3
4 **Q. Have you been able to determine what portions of the increase requested by APS in**
5 **its general rate case are likely to not be controversial?**

6 A. Not with a precise degree of accuracy. However, unless imprudence or accounting errors
7 were to be found, a utility's net book plant, taken from its audited accounting records,
8 would tend not to be controversial, whereas utility proposed pro forma adjustments,
9 especially ones that are significantly different from those approved by the regulatory
10 commission in the prior rate case, may tend to be controversial.

11
12 **Q. Given the time frame provided for addressing APS' request for interim rates, how**
13 **would you recommend that an amount of interim increase be determined?**

14 A. Given the limited review time available to address a revenue requirement for interim rates,
15 one method of providing for interim rates would be to recognize the increased investment
16 in net plant that APS has experienced from its last rate case through December 31, 2007,
17 the end of the test year in the current APS general rate case, and to base the interim rate
18 increase on providing a return on that, at the last approved cost of capital.

19
20 APS had invested in net plant since the test year in its last rate case. A portion of APS'
21 investment in net plant through December 31, 2007, the end of the test year in APS'
22 current general rate case, has not yet been recognized for ratemaking purposes. The
23 increase in jurisdictional rate base from Decision No. 69663 through December 31, 2007
24 could be used as a basis for determining an amount of interim rate increase in the current
25 proceeding. If the Commission determines that it should grant APS an interim rate
26 increase, I recommend an interim increase of approximately \$65.2 million effective with

1 the first billing cycle in November 2008, and contingent upon APS receiving the \$400
2 million equity infusion from PNW by then.

3
4 **Q. Why would you focus on net plant, rather than total capital expenditures, i.e., on**
5 **gross plant?**

6 **A.** Focusing on gross plant or total capital expenditures, rather than on net plant or net growth
7 in jurisdictional rate base, would substantially overstate the net amount financed by
8 investors. The major component of rate base is net plant. In deriving rate base,
9 Accumulated Depreciation is subtracted from Plant in Service to derive net plant.
10 Depreciation accruals, which continue each year, provide a source of funds supporting
11 APS' investment in plant. As shown on Schedule E-2, line 4 of APS' filing, the Company
12 recorded Depreciation and Amortization of \$353 million in 2006 and \$365.4 million in
13 2007. As shown on Schedule E-1, page 1, lines 1-3 of APS' filing, from 12/31/05 to
14 12/31/07, APS' gross Plant in Service (and held for future use) increased from \$10.683
15 billion to \$11.583 billion, an increase of approximately \$899 million over that two-year
16 period. Concurrent with that, however, Accumulated Depreciation also grew from
17 approximately \$4 billion as of 12/31/05 to \$4.387 billion as of 12/31/87, for an increase of
18 approximately \$386 million. Using the information on APS' Schedule E-1, line 3, as an
19 approximation of the growth in net plant, from 12/31/05 to 12/31/07, APS' net utility plant
20 grew from \$6.681 billion to \$7.196 billion, an increase of approximately \$514 million.

21
22 From another perspective, adjusted jurisdictional net plant for APS, as reflected in
23 Decision No. 69663, was approximately \$5.750 billion. Unadjusted jurisdictional net
24 plant in APS' current rate case filing (at Schedule B-1, column D) is approximately
25 \$6.241 billion. This represents an increase in jurisdictional net plant of approximately
26 \$491 million.

1 **Q. What amount of interim rate increase would you suggest in order to provide rate**
2 **recognition of the increase in jurisdictional rate base that APS has experienced**
3 **through December 31, 2007?**

4 A. If the Commission determines that it should grant APS an interim rate increase, I
5 recommend an interim increase in the amount of \$65.2 million effective with the first
6 billing cycle in November 2008, and contingent upon APS receiving the \$400 million
7 equity infusion from PNW by that time.

8
9 **Q. Have you attached calculations showing how you derived that amount?**

10 A. Yes. Supporting calculations for Staff's alternative basis for determining an amount of
11 Interim Rate increase are presented in Attachment RCS-4.

12
13 **Q. Please explain Attachment RCS-4.**

14 A. Attachment RCS-4 is essentially a simplified revenue requirements model. Schedule A
15 shows the amount of revenue increase. The net change in jurisdictional rate base from
16 Decision No. 69663 to the unadjusted end-of-test-year amount from APS' Schedule B-1,
17 column D, of \$538 million, is multiplied by the cost of capital of 8.32% from Decision
18 No. 69663, to derive operating income required of \$44.753 million. Increased rate base
19 produced an increased interest deduction, using the Commission's interest synchronization
20 methodology, which decreased income tax expense and increased operating income by
21 \$5.212 million, as shown on Schedule A, line 4. The net change in operating income of
22 \$39.541 million is multiplied by the gross revenue conversion factor of 1.6491 to derive
23 the alternative amount of interim rate increase of approximately \$65.2 million.

24
25 Supporting calculations are included in Attachment RCS-4. Schedule A-1 shows the gross
26 revenue conversion factor. Schedule B shows the change in jurisdictional rate base.

1 Schedule C shows the impact of interest synchronization. Schedule D shows the capital
2 structure and cost of capital authorized in Decision No. 69663.

3
4 **Q. Does a \$65.2 million interim increase reflect any impact from APS pro forma rate**
5 **base adjustments or a higher cost of capital than the Commission approved in**
6 **Decision No. 69663?**

7 A. No. Because APS' general rate case has not been reviewed in sufficient detail as of this
8 time to ascertain what amount of permanent rate increase Staff would recommend, I have
9 limited the rate base change to actual as of December 31, 2007 and have not included any
10 APS-proposed pro forma adjustments. This amount also utilizes the same capital structure
11 and cost of capital that the Commission approved in Decision No. 69663. Staff will
12 evaluate and respond to APS' request for a higher cost of capital in the general rate case.

13
14 **Q. Should the amount of interim rate increase be tied to a single financial ratio, such as**
15 **FFO/Debt?**

16 A. No. As discussed above, APS is not currently experiencing a financial emergency. Nor
17 does a downgrade to junk status appear probable or imminent during the pendency of
18 APS' current general rate case. As described on pages 16-21 of my testimony, even
19 without any interim rate increase, APS's FFO/Debt ratio is projected to remain within the
20 range established by S&P for APS' current debt rating and risk profile. Staff also cautions
21 against basing any rate relief for APS on the results of a single financial ratio, such as
22 FFO/Debt. As explained by Staff witness Parcell, financial ratios that are used by credit
23 rating agencies are one item of information that APS has presented. Staff recommends
24 against replacing the Commission's traditional ratemaking model of cost-based, rate-of-
25 return regulation with a new model that would base utility rate increases on targeting one
26 specific financial ratio, such as FFO/Debt.

1 **Q. Is it necessary to tie the amount of an interim rate increase to an expired fuel**
2 **surcharge?**

3 A. No. The basis for the amount of interim rate increase requested by APS is tied to the
4 approximately 4 mils per kWh of a PSA surcharge that expired in July 2008. Since that
5 surcharge has expired, and has been removed from customer rates as originally intended
6 upon full recovery of the surcharged costs, there is no need to now tie the amount of an
7 interim rate increase to an expired fuel surcharge. Staff's analysis indicates that APS does
8 not require an interim rate increase of \$115 million at this time. Moreover, the amount of
9 interim increase need not, and should not be, tied to the amount of the PSA surcharge that
10 expired in July 2008.

11
12 **Q. Have any credit rating agencies announced that APS' debt would be downgraded if**
13 **APS' request for interim rates were to be granted in an amount substantially lower**
14 **than the \$115 million requested by APS?**

15 A. According to APS' response to data request Staff Interim 2.27(c)⁴⁴ none have.

16
17 **Q. If any refundable interim rate relief were to be granted in response to APS' current**
18 **request, what safeguards are required?**

19 A. I am not recommending that interim rate relief be granted to APS in this proceeding.
20 However, if the Commission were inclined to grant APS some amount of interim rate
21 relief, I am aware that it may be necessary for APS to post a bond.⁴⁵ Thus, granting an
22 interim rate increase may result in an additional cost to APS and its ratepayers related to
23 the cost of the surety bond or letter of credit.

24

⁴⁴ A copy of that response is included in Attachment RCS-2, page 32.

⁴⁵ See, e.g., Cite Court of Appeals decision

1 **Q. Has APS estimated what the cost of a surety bond or letter of credit would be?**

2 A. Yes. In response to Staff Interim 2.74, APS estimates that the cost of a surety bond or a
3 letter of credit would be approximately 1% of the face value.⁴⁶

4
5 **Q. Has APS indicated whether it would be willing to provide such a surety bond or
6 other form of guarantee?**

7 A. Yes. APS' response to Staff Interim 2.73⁴⁷ stated as follows:

8
9 *Although APS does not believe that it is legally obligated or necessary to*
10 *post a bond, APS would nonetheless be willing to provide a bond or a*
11 *letter of credit guaranteeing the refunds, if ordered to do so by the*
12 *Commission.*

13
14 **Q. Is there a way to avoid the extra cost of a surety bond or letter of credit to APS and
15 its ratepayers?**

16 A. Yes. Such cost could be avoided by denying APS' request for an interim rate increase.

17
18 **Q. Should APS be granted interim rate relief in the absence of the equity infusion?**

19 A. No. No interim rate increase should be granted to APS until after the \$400 million equity
20 infusion approved by the Commission in Decision No. 70454 has been made. Put another
21 way, any interim rate increase granted to APS should be contingent upon the completion
22 of the \$400 million equity infusion approved by the Commission in Decision No. 70454.
23 This additional equity would assist APS' efforts to maintain a balance of cost and
24 financial risk in its capital structure while funding its capital expenditures.

25

⁴⁶ See Attachment RCS-2, page 49.

⁴⁷ See Attachment RCS-2, page 50.

1 ***G. Rate Design***

2 **Q. Please discuss the rate design proposed by APS for an interim rate increase.**

3 A. APS witness Rumolo's affidavit presents three options for rate design for an interim rate
4 increase:

- 5
- 6 1) Applying the same per kWh charge to all affected customers;
 - 7 2) Applying a fixed percentage of base rates uniformly across all rate schedules; and
 - 8 3) A two-step process, which would first assign the revenue requirement to customer
9 classes (i.e., residential, general service, industrial, etc.) on an energy basis. For
10 customers who are billed on a demand basis, the revenue increase would be converted
11 to a per kW demand charge.
- 12

13 At page 5 of his affidavit, Mr. Rumolo concludes that each of the three options provides
14 APS with the same level of interim rate relief and the Company does not have a
15 preference for any one of the options.

16

17 **Q. In APS' last general rate case, what rate design did Staff favor, and what generally
18 did the Commission adopt?**

19 A. In APS' last rate case, Docket No. E-01345A-05-0816 et al, for APS' new permanent
20 rates, Staff generally favored a rate spread that reflects the results of the class cost of
21 service study ("COSS"), as opposed to an across-the-board increase. Decision No. 69663,
22 at page 76, indicates that the Commission generally adopted APS' rate design as modified
23 by Staff and with an AECC proposal for transmission rate design agreed to by APS.

24

1 **Q. For interim rates, does Staff have a preference between the three alternative methods**
2 **for rate design proposed by APS?**

3 A. The rate design for an interim increase should be simple and straight-forward to
4 implement and should also facilitate being able to track and verify the revenue produced
5 by the Interim Rate increase in case there is a need to make refunds. If any interim rate
6 increase is granted, Staff recommends that the Interim Base Rate Surcharge use the same
7 per-kWh charge for all affected customers.

8

9 **Q. Does this conclude your testimony?**

10 A. Yes, it does.

Attachment RCS-1
QUALIFICATIONS OF RALPH C. SMITH

Accomplishments

Mr. Smith's professional credentials include being a Certified Financial Planner™ professional, a licensed Certified Public Accountant and attorney. He functions as project manager on consulting projects involving utility regulation, regulatory policy and ratemaking and utility management. His involvement in public utility regulation has included project management and in-depth analyses of numerous issues involving telephone, electric, gas, and water and sewer utilities.

Mr. Smith has performed work in the field of utility regulation on behalf of industry, PSC staffs, state attorney generals, municipalities, and consumer groups concerning regulatory matters before regulatory agencies in Alabama, Alaska, Arizona, Arkansas, California, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Kentucky, Louisiana, Maine, Michigan, Minnesota, Mississippi, Missouri, New Jersey, New Mexico, New York, Nevada, North Dakota, Ohio, Pennsylvania, South Carolina, South Dakota, Texas, Utah, Vermont, Washington, Washington, D.C., Wisconsin, Canada, Federal Energy Regulatory Commission and various state and federal courts of law. He has presented expert testimony in regulatory hearings on behalf of utility commission staffs and intervenors on several occasions.

Project manager in Larkin & Associates' review, on behalf of the Georgia Commission Staff, of the budget and planning activities of Georgia Power Company; supervised 13 professionals; coordinated over 200 interviews with Company budget center managers and executives; organized and edited voluminous audit report; presented testimony before the Commission. Functional areas covered included fossil plant O&M, headquarters and district operations, internal audit, legal, affiliated transactions, and responsibility reporting. All of our findings and recommendations were accepted by the Commission.

Key team member in the firm's management audit of the Anchorage Water and Wastewater Utility on behalf of the Alaska Commission Staff, which assessed the effectiveness of the Utility's operations in several areas; responsible for in-depth investigation and report writing in areas involving information systems, finance and accounting, affiliated relationships and transactions, and use of outside contractors. Testified before the Alaska Commission concerning certain areas of the audit report. AWWU concurred with each of Mr. Smith's 40 plus recommendations for improvement.

Co-consultant in the analysis of the issues surrounding gas transportation performed for the law firm of Cravath, Swaine & Moore in conjunction with the case of Reynolds Metals Co. vs. the Columbia Gas System, Inc.; drafted in-depth report concerning the regulatory treatment at both state and federal levels of issues such as flexible pricing and mandatory gas transportation.

Lead consultant and expert witness in the analysis of the rate increase request of the City of Austin - Electric Utility on behalf of the residential consumers. Among the numerous ratemaking issues addressed was the economics of the Utility's employment of outside services; provided both written and oral testimony outlining recommendations and their bases. Most of Mr. Smith's recommendations were adopted by the City Council and Utility in a settlement.

Key team member performing an analysis of the rate stabilization plan submitted by the Southern Bell Telephone & Telegraph Company to the Florida PSC; performed comprehensive analysis of the Company's projections and budgets which were used as the basis for establishing rates.

Lead consultant in analyzing Southwestern Bell Telephone separations in Missouri; sponsored the complex technical analysis and calculations upon which the firm's testimony in that case was based. He has also assisted in analyzing changes in depreciation methodology for setting telephone rates.

Lead consultant in the review of gas cost recovery reconciliation applications of Michigan Gas Utilities Company, Michigan Consolidated Gas Company, and Consumers Power Company. Drafted recommendations regarding the appropriate rate of interest to be applied to any over or under collections and the proper procedures and allocation methodology to be used to distribute any refunds to customer classes.

Lead consultant in the review of Consumers Power Company's gas cost recovery refund plan. Addressed appropriate interest rate and compounding procedures and proper allocation methodology.

Project manager in the review of the request by Central Maine Power Company for an increase in rates. The major area addressed was the propriety of the Company's ratemaking attrition adjustment in relation to its corporate budgets and projections.

Project manager in an engagement designed to address the impacts of the Tax Reform Act of 1986 on gas distribution utility operations of the Northern States Power Company. Analyzed the reduction in the corporate tax rate, uncollectibles reserve, ACRS, unbilled revenues, customer advances, CIAC, and timing of TRA-related impacts associated with the Company's tax liability.

Project manager and expert witness in the determination of the impacts of the Tax Reform Act of 1986 on the operations of Connecticut Natural Gas Company on behalf of the Connecticut Department of Public Utility Control - Prosecutorial Division, Connecticut Attorney General, and Connecticut Department of Consumer Counsel.

Lead Consultant for The Minnesota Department of Public Service ("DPS") to review the Minnesota Incentive Plan ("Incentive Plan") proposal presented by Northwestern Bell Telephone Company ("NWB") doing business as U S West Communications ("USWC"). Objective was to express an opinion as to whether current rates addressed by the plan were appropriate from a Minnesota intrastate revenue requirements and accounting perspective, and to assist in developing recommended modifications to NWB's proposed Plan.

Performed a variety of analytical and review tasks related to our work effort on this project. Obtained and reviewed data and performed other procedures as necessary (1) to obtain an understanding of the Company's Incentive Plan filing package as it relates to rate base, operating income, revenue requirements, and plan operation, and (2) to formulate an opinion concerning the reasonableness of current rates and of amounts included within the Company's Incentive Plan filing. These procedures included requesting and reviewing extensive discovery, visiting the Company's offices to review data, issuing follow-up information requests in many instances, telephone and on-site discussions with Company representatives, and frequent discussions with counsel and DPS Staff assigned to the project.

Lead Consultant in the regulatory analysis of Jersey Central Power & Light Company for the Department of the Public Advocate, Division of Rate Counsel. Tasks performed included on-site review and audit of Company, identification and analysis of specific issues, preparation of data requests, testimony, and cross examination questions. Testified in Hearings.

Assisted the NARUC Committee on Management Analysis with drafting the Consultant Standards for Management Audits.

Presented training seminars covering public utility accounting, tax reform, ratemaking, affiliated transaction auditing, rate case management, and regulatory policy in Maine, Georgia, Kentucky, and Pennsylvania. Seminars were presented to commission staffs and consumer interest groups.

Previous Positions

With Larkin, Chapski and Co., the predecessor firm to Larkin & Associates, was involved primarily in utility regulatory consulting, and also in tax planning and tax research for businesses and individuals, tax return preparation and review, and independent audit, review and preparation of financial statements.

Installed computerized accounting system for a realty management firm.

Education

Bachelor of Science in Administration in Accounting, with distinction, University of Michigan, Dearborn, 1979.

Master of Science in Taxation, Walsh College, Michigan, 1981. Master's thesis dealt with investment tax credit and property tax on various assets.

Juris Doctor, cum laude, Wayne State University Law School, Detroit, Michigan, 1986. Recipient of American Jurisprudence Award for academic excellence.

Continuing education required to maintain CPA license and CFP® certificate.

Passed all parts of CPA examination in first sitting, 1979. Received CPA certificate in 1981 and Certified Financial Planning certificate in 1983. Admitted to Michigan and Federal bars in 1986.

Michigan Bar Association.

American Bar Association, sections on public utility law and taxation.

Partial list of utility cases participated in:

79-228-EL-FAC	Cincinnati Gas & Electric Company (Ohio PUC)
79-231-EL-FAC	Cleveland Electric Illuminating Company (Ohio PUC)
79-535-EL-AIR	East Ohio Gas Company (Ohio PUC)
80-235-EL-FAC	Ohio Edison Company (Ohio PUC)
80-240-EL-FAC	Cleveland Electric Illuminating Company (Ohio PUC)
U-1933*	Tucson Electric Power Company (Arizona Corp. Commission)
U-6794	Michigan Consolidated Gas Co. --16 Refunds (Michigan PSC)
81-0035TP	Southern Bell Telephone Company (Florida PSC)
81-0095TP	General Telephone Company of Florida (Florida PSC)
81-308-EL-EFC	Dayton Power & Light Co.- Fuel Adjustment Clause (Ohio PUC)
810136-EU	Gulf Power Company (Florida PSC)
GR-81-342	Northern States Power Co. -- E-002/Minnesota (Minnesota PUC)
Tr-81-208	Southwestern Bell Telephone Company (Missouri PSC))
U-6949	Detroit Edison Company (Michigan PSC)
8400	East Kentucky Power Cooperative, Inc. (Kentucky PSC)
18328	Alabama Gas Corporation (Alabama PSC)
18416	Alabama Power Company (Alabama PSC)
820100-EU	Florida Power Corporation (Florida PSC)
8624	Kentucky Utilities (Kentucky PSC)
8648	East Kentucky Power Cooperative, Inc. (Kentucky PSC)
U-7236	Detroit Edison - Burlington Northern Refund (Michigan PSC)
U6633-R	Detroit Edison - MRCS Program (Michigan PSC)
U-6797-R	Consumers Power Company -MRCS Program (Michigan PSC)

U-5510-R	Consumers Power Company - Energy conservation Finance Program (Michigan PSC)
82-240E	South Carolina Electric & Gas Company (South Carolina PSC)
7350	Generic Working Capital Hearing (Michigan PSC)
RH-1-83	Westcoast Transmission Co., (National Energy Board of Canada)
820294-TP	Southern Bell Telephone & Telegraph Co. (Florida PSC)
82-165-EL-EFC (Subfile A)	Toledo Edison Company (Ohio PUC)
82-168-EL-EFC	Cleveland Electric Illuminating Company (Ohio PUC)
830012-EU	Tampa Electric Company (Florida PSC)
U-7065	The Detroit Edison Company - Fermi II (Michigan PSC)
8738	Columbia Gas of Kentucky, Inc. (Kentucky PSC)
ER-83-206	Arkansas Power & Light Company (Missouri PSC)
U-4758	The Detroit Edison Company - Refunds (Michigan PSC)
8836	Kentucky American Water Company (Kentucky PSC)
8839	Western Kentucky Gas Company (Kentucky PSC)
83-07-15	Connecticut Light & Power Co. (Connecticut DPU)
81-0485-WS	Palm Coast Utility Corporation (Florida PSC)
U-7650	Consumers Power Co. - Partial and Immediate (Michigan PSC)
83-662	Continental Telephone Company of California, (Nevada PSC)
U-7650	Consumers Power Company - Final (Michigan PSC)
U-6488-R	Detroit Edison Co., FAC & PIPAC Reconciliation (Michigan PSC)
U-15684	Louisiana Power & Light Company (Louisiana PSC)
7395 & U-7397	Campaign Ballot Proposals (Michigan PSC)
820013-WS	Seacoast Utilities (Florida PSC)
U-7660	Detroit Edison Company (Michigan PSC)
83-1039	CP National Corporation (Nevada PSC)
U-7802	Michigan Gas Utilities Company (Michigan PSC)
83-1226	Sierra Pacific Power Company (Nevada PSC)
830465-EI	Florida Power & Light Company (Florida PSC)
U-7777	Michigan Consolidated Gas Company (Michigan PSC)
U-7779	Consumers Power Company (Michigan PSC)
U-7480-R	Michigan Consolidated Gas Company (Michigan PSC)
U-7488-R	Consumers Power Company - Gas (Michigan PSC)
U-7484-R	Michigan Gas Utilities Company (Michigan PSC)
U-7550-R	Detroit Edison Company (Michigan PSC)
U-7477-R**	Indiana & Michigan Electric Company (Michigan PSC)
18978	Continental Telephone Co. of the South Alabama (Alabama PSC)
R-842583	Duquesne Light Company (Pennsylvania PUC)
R-842740	Pennsylvania Power Company (Pennsylvania PUC)
850050-EI	Tampa Electric Company (Florida PSC)
16091	Louisiana Power & Light Company (Louisiana PSC)
19297	Continental Telephone Co. of the South Alabama (Alabama PSC)
76-18788AA	
&76-18793AA	Detroit Edison - Refund - Appeal of U-4807 (Ingham County, Michigan Circuit Court)
85-53476AA	
& 85-534785AA	Detroit Edison Refund - Appeal of U-4758 (Ingham County, Michigan Circuit Court)
U-8091/U-8239	Consumers Power Company - Gas Refunds (Michigan PSC)
TR-85-179**	United Telephone Company of Missouri (Missouri PSC)
85-212	Central Maine Power Company (Maine PSC)
ER-85646001	
& ER-85647001	New England Power Company (FERC)
850782-EI & 850783-EI	Florida Power & Light Company (Florida PSC)
R-860378	Duquesne Light Company (Pennsylvania PUC)

R-850267	Pennsylvania Power Company (Pennsylvania PUC)
851007-WU	
& 840419-SU	Florida Cities Water Company (Florida PSC)
G-002/GR-86-160	Northern States Power Company (Minnesota PSC)
7195 (Interim)	Gulf States Utilities Company (Texas PUC)
87-01-03	Connecticut Natural Gas Company (Connecticut PUC))
87-01-02	Southern New England Telephone Company (Connecticut Department of Public Utility Control)
R-860378	Duquesne Light Company Surrebuttal (Pennsylvania PUC)
3673-	Georgia Power Company (Georgia PSC)
29484	Long Island Lighting Co. (New York Dept. of Public Service)
U-8924	Consumers Power Company - Gas (Michigan PSC)
Docket No. 1	Austin Electric Utility (City of Austin, Texas)
Docket E-2, Sub 527	Carolina Power & Light Company (North Carolina PUC)
870853	Pennsylvania Gas and Water Company (Pennsylvania PUC)
880069**	Southern Bell Telephone Company (Florida PSC)
U-1954-88-102	Citizens Utilities Rural Company, Inc. & Citizens Utilities Company, Kingman Telephone Division (Arizona CC)
T E-1032-88-102	Illinois Bell Telephone Company (Illinois CC)
89-0033	Puget Sound Power & Light Company (Washington UTC))
U-89-2688-T	Philadelphia Electric Company (Pennsylvania PUC)
R-891364	Potomac Electric Power Company (District of Columbia PSC)
F.C. 889	Niagara Mohawk Power Corporation, et al Plaintiffs, v. Gulf+ Western, Inc. et al, defendants (Supreme Court County of Onondaga, State of New York)
Case No. 88/546*	
87-11628*	Duquesne Light Company, et al, plaintiffs, against Gulf+ Western, Inc. et al, defendants (Court of the Common Pleas of Allegheny County, Pennsylvania Civil Division)
890319-EI	Florida Power & Light Company (Florida PSC)
891345-EI	Gulf Power Company (Florida PSC)
ER 8811 0912J	Jersey Central Power & Light Company (BPU)
6531	Hawaiian Electric Company (Hawaii PUCs)
R0901595	Equitable Gas Company (Pennsylvania Consumer Counsel)
90-10	Artesian Water Company (Delaware PSC)
89-12-05	Southern New England Telephone Company (Connecticut PUC)
900329-WS	Southern States Utilities, Inc. (Florida PSC)
90-12-018	Southern California Edison Company (California PUC)
90-E-1185	Long Island Lighting Company (New York DPS)
R-911966	Pennsylvania Gas & Water Company (Pennsylvania PUC)
I.90-07-037, Phase II	(Investigation of OPEBs) Department of the Navy and all Other Federal Executive Agencies (California PUC)
U-1551-90-322	Southwest Gas Corporation (Arizona CC)
U-1656-91-134	Sun City Water Company (Arizona RUCO)
U-2013-91-133	Havasu Water Company (Arizona RUCO)
91-174***	Central Maine Power Company (Department of the Navy and all Other Federal Executive Agencies)
U-1551-89-102	Southwest Gas Corporation - Rebuttal and PGA Audit (Arizona Corporation Commission)
& U-1551-89-103	
Docket No. 6998	Hawaiian Electric Company (Hawaii PUC)
TC-91-040A and	Intrastate Access Charge Methodology, Pool and Rates
TC-91-040B	Local Exchange Carriers Association and South Dakota Independent Telephone Coalition
9911030-WS &	General Development Utilities - Port Malabar and
911-67-WS	West Coast Divisions (Florida PSC)
922180	The Peoples Natural Gas Company (Pennsylvania PUC)
7233 and 7243	Hawaiian Nonpension Postretirement Benefits (Hawaiian PUC)

R-00922314	Metropolitan Edison Company (Pennsylvania PUC)
& M-920313C006	Pennsylvania American Water Company (Pennsylvania PUC)
R00922428	
E-1032-92-083 &	
U-1656-92-183	Citizens Utilities Company, Agua Fria Water Division (Arizona Corporation Commission)
92-09-19	Southern New England Telephone Company (Connecticut PUC)
E-1032-92-073	Citizens Utilities Company (Electric Division), (Arizona CC)
UE-92-1262	Puget Sound Power and Light Company (Washington UTC))
92-345	Central Maine Power Company (Maine PUC)
R-932667	Pennsylvania Gas & Water Company (Pennsylvania PUC)
U-93-60**	Matanuska Telephone Association, Inc. (Alaska PUC)
U-93-50**	Anchorage Telephone Utility (Alaska PUC)
U-93-64	PTI Communications (Alaska PUC)
7700	Hawaiian Electric Company, Inc. (Hawaii PUC)
E-1032-93-111 &	Citizens Utilities Company - Gas Division
U-1032-93-193	(Arizona Corporation Commission)
R-00932670	Pennsylvania American Water Company (Pennsylvania PUC)
U-1514-93-169/	Sale of Assets CC&N from Contel of the West, Inc. to
E-1032-93-169	Citizens Utilities Company (Arizona Corporation Commission)
7766	Hawaiian Electric Company, Inc. (Hawaii PUC)
93-2006- GA-AIR*	The East Ohio Gas Company (Ohio PUC)
94-E-0334	Consolidated Edison Company (New York DPS)
94-0270	Inter-State Water Company (Illinois Commerce Commission)
94-0097	Citizens Utilities Company, Kauai Electric Division (Hawaii PUC)
PU-314-94-688	Application for Transfer of Local Exchanges (North Dakota PSC)
94-12-005-Phase I	Pacific Gas & Electric Company (California PUC)
R-953297	UGI Utilities, Inc. - Gas Division (Pennsylvania PUC)
95-03-01	Southern New England Telephone Company (Connecticut PUC)
95-0342	Consumer Illinois Water, Kankakee Water District (Illinois CC)
94-996-EL-AIR	Ohio Power Company (Ohio PUC)
95-1000-E	South Carolina Electric & Gas Company (South Carolina PSC)
Non-Docketed	Citizens Utility Company - Arizona Telephone Operations
Staff Investigation	(Arizona Corporation Commission)
E-1032-95-473	Citizens Utility Co. - Northern Arizona Gas Division (Arizona CC)
E-1032-95-433	Citizens Utility Co. - Arizona Electric Division (Arizona CC)
	Collaborative Ratemaking Process Columbia Gas of Pennsylvania (Pennsylvania PUC)
GR-96-285	Missouri Gas Energy (Missouri PSC)
94-10-45	Southern New England Telephone Company (Connecticut PUC)
A.96-08-001 et al.	California Utilities' Applications to Identify Sunk Costs of Non- Nuclear Generation Assets, & Transition Costs for Electric Utility Restructuring, & Consolidated Proceedings (California PUC)
96-324	Bell Atlantic - Delaware, Inc. (Delaware PSC)
96-08-070, et al.	Pacific Gas & Electric Co., Southern California Edison Co. and San Diego Gas & Electric Company (California PUC)
97-05-12	Connecticut Light & Power (Connecticut PUC)
R-00973953	Application of PECO Energy Company for Approval of its Restructuring Plan Under Section 2806 of the Public Utility Code (Pennsylvania PUC)
97-65	Application of Delmarva Power & Light Co. for Application of a Cost Accounting Manual and a Code of Conduct (Delaware PSC)
16705	Entergy Gulf States, Inc. (Cities Steering Committee)
E-1072-97-067	Southwestern Telephone Co. (Arizona Corporation Commission)
Non-Docketed	Delaware - Estimate Impact of Universal Services Issues
Staff Investigation	(Delaware PSC)

PU-314-97-12	US West Communications, Inc. Cost Studies (North Dakota PSC)
97-0351	Consumer Illinois Water Company (Illinois CC)
97-8001	Investigation of Issues to be Considered as a Result of Restructuring of Electric Industry (Nevada PSC)
U-0000-94-165	Generic Docket to Consider Competition in the Provision of Retail Electric Service (Arizona Corporation Commission)
98-05-006-Phase I	San Diego Gas & Electric Co., Section 386 costs (California PUC)
9355-U	Georgia Power Company Rate Case (Georgia PUC)
97-12-020 - Phase I	Pacific Gas & Electric Company (California PUC)
U-98-56, U-98-60,	Investigation of 1998 Intrastate Access charge filings
U-98-65, U-98-67	(Alaska PUC)
(U-99-66, U-99-65,	Investigation of 1999 Intrastate Access Charge filing
U-99-56, U-99-52)	(Alaska PUC)
Phase II of 97-SCCC-149-GIT	
PU-314-97-465	Southwestern Bell Telephone Company Cost Studies (Kansas CC)
Non-docketed Assistance	US West Universal Service Cost Model (North Dakota PSC)
	Bell Atlantic - Delaware, Inc., Review of New Telecomm. and Tariff Filings (Delaware PSC)
Contract Dispute	City of Zeeland, MI - Water Contract with the City of Holland, MI (Before an arbitration panel)
Non-docketed Project	City of Danville, IL - Valuation of Water System (Danville, IL)
Non-docketed	Village of University Park, IL - Valuation of Water and
Project	Sewer System (Village of University Park, Illinois)
E-1032-95-417	Citizens Utility Co., Maricopa Water/Wastewater Companies et al. (Arizona Corporation Commission)
T-1051B-99-0497	Proposed Merger of the Parent Corporation of Qwest Communications Corporation, LCI International Telecom Corp., and US West Communications, Inc. (Arizona CC)
T-01051B-99-0105	US West Communications, Inc. Rate Case (Arizona CC)
A00-07-043	Pacific Gas & Electric - 2001 Attrition (California PUC)
T-01051B-99-0499	US West/Quest Broadband Asset Transfer (Arizona CC)
99-419/420	US West, Inc. Toll and Access Rebalancing (North Dakota PSC)
PU314-99-119	US West, Inc. Residential Rate Increase and Cost Study Review (North Dakota PSC)
98-0252	Ameritech - Illinois, Review of Alternative Regulation Plan (Illinois CUB)
00-108	Delmarva Billing System Investigation (Delaware PSC)
U-00-28	Matanuska Telephone Association (Alaska PUC)
Non-Docketed	Management Audit and Market Power Mitigation Analysis of the Merged Gas System Operation of Pacific Enterprises and Enova Corporation (California PUC)
00-11-038	Southern California Edison (California PUC)
00-11-056	Pacific Gas & Electric (California PUC)
00-10-028	The Utility Reform Network for Modification of Resolution E-3527 (California PUC)
98-479	Delmarva Power & Light Application for Approval of its Electric and Fuel Adjustments Costs (Delaware PSC)
99-457	Delaware Electric Cooperative Restructuring Filing (Delaware PSC)
99-582	Delmarva Power & Light dba Conectiv Power Delivery
	Analysis of Code of Conduct and Cost Accounting Manual (Delaware PSC)
99-03-04	United Illuminating Company Recovery of Stranded Costs (Connecticut OCC)
99-03-36	Connecticut Light & Power (Connecticut OCC)
Civil Action No.	
98-1117	West Penn Power Company vs. PA PUC (Pennsylvania PSC)

Case No. 12604	Upper Peninsula Power Company (Michigan AG)
Case No. 12613	Wisconsin Public Service Commission (Michigan AG)
41651	Northern Indiana Public Service Co Overearnings investigation (Indiana UCC)
13605-U	Savannah Electric & Power Company – FCR (Georgia PSC)
14000-U	Georgia Power Company Rate Case/M&S Review (Georgia PSC)
13196-U	Savannah Electric & Power Company Natural Gas Procurement and Risk Management/Hedging Proposal, Docket No. 13196-U (Georgia PSC)
Non-Docketed	Georgia Power Company & Savannah Electric & Power FPR
	Company Fuel Procurement Audit (Georgia PSC)
Non-Docketed	Transition Costs of Nevada Vertically Integrated Utilities (US Department of Navy)
Application No. 99-01-016,	Post-Transition Ratemaking Mechanisms for the Electric Industry Restructuring (US Department of Navy)
Phase I	
99-02-05	Connecticut Light & Power (Connecticut OCC)
01-05-19-RE03	Yankee Gas Service Application for a Rate Increase, Phase I-2002-IERM (Connecticut OCC)
G-01551A-00-0309	Southwest Gas Corporation, Application to amend its rate Schedules (Arizona CC)
00-07-043	Pacific Gas & Electric Company Attrition & Application for a rate increase (California PUC)
97-12-020	
Phase II	Pacific Gas & Electric Company Rate Case (California PUC)
01-10-10	United Illuminating Company (Connecticut OCC)
13711-U	Georgia Power FCR (Georgia PSC)
02-001	Verizon Delaware § 271(Delaware DPA)
02-BLVT-377-AUD	Blue Valley Telephone Company Audit/General Rate Investigation (Kansas CC)
02-S&TT-390-AUD	S&T Telephone Cooperative Audit/General Rate Investigation (Kansas CC)
01-SFLT-879-AUD	Sunflower Telephone Company Inc., Audit/General Rate Investigation (Kansas CC)
01-BSTT-878-AUD	Bluestem Telephone Company, Inc. Audit/General Rate Investigation (Kansas CC)
P404, 407, 520, 413	
426, 427, 430, 421/	
CI-00-712	Sherburne County Rural Telephone Company, dba as Connections, Etc. (Minnesota DOC)
U-01-85	ACS of Alaska, dba as Alaska Communications Systems (ACS), Rate Case (Alaska Regulatory Commission PAS)
U-01-34	ACS of Anchorage, dba as Alaska Communications Systems (ACS), Rate Case (Alaska Regulatory Commission PAS)
U-01-83	ACS of Fairbanks, dba as Alaska Communications Systems (ACS), Rate Case (Alaska Regulatory Commission PAS)
U-01-87	ACS of the Northland, dba as Alaska Communications Systems (ACS), Rate Case (Alaska Regulatory Commission PAS)
96-324, Phase II	Verizon Delaware, Inc. UNE Rate Filing (Delaware PSC)
03-WHST-503-AUD	Wheat State Telephone Company (Kansas CC)
04-GNBT-130-AUD	Golden Belt Telephone Association (Kansas CC)
Docket 6914	Shoreham Telephone Company, Inc. (Vermont BPU)

Arizona Public Service Company
Docket No. E-01345A-08-0172
Attachment RCS-2
Copies of APS' Responses to Data Requests
and Documents Referenced in the Direct Testimony and Schedules of
Ralph C. Smith

Staff Interim/ Data Request No.	Subject	Conf.	No. of Pages	Page No.
2.96	Capital Expenditures from 9/30/05 through 5/31/08	No	9	2 - 10
APS13014	Bond Ratings	No	2	11 - 12
2.38	Default Conditions	No	1	13
2.39	Default Conditions	No	1	14
Staff 1.13	2007 PSA Surcharge	No	1	15
	Standard & Poor's Credit Agency Report - January 24, 2006	No	3	16 - 18
APS13070	Standard & Poor's Rating Direct Report - June 25, 2008	No	5	19 - 23
APS13012	Fitch's January 30, 2006 Report	No	2	24 - 25
2.56	Bond Ratings	No	1	26
2.55	Bond Ratings	No	4	27 - 30
2.71	Bond Ratings - Long-term debt	No	1	31
2.27	Brandt's affidavit - Base Rates	No	1	32
2.76	Cash Flow	No	1	33
2.24	Brandt's affidavit - Debt Markets	No	1	34
2.19	Brandt's affidavit - Equity	No	1	35
APS13333	FFO/Debt Impact	No	1	36
	Appendix A to Staff Closing Brief - Docket No. E-01345A-06-0009	No	5	37 - 41
APS13051	Moody's Credit Opinion - July 28, 2008	No	6	42 - 47
2.97	Rate Increase	No	1	48
2.74	Bond Costs	No	1	49
2.73	Interim Rate Relief Refund	No	1	50
APS13052	Moody's Credit Opinion II - July 28, 2008	No	6	51 - 56
2.59 & 2.60 - Supplement 2	Net Cash Flow to Capital Expenditures and FFO/Debt	No	4	57 - 60
	Standard & Poor's U.S. Utilities Ratings Analysis - November 30, 2007	No	4	61 - 64
Total Pages Including this Page			64	

ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172-INTERIM RATES
JULY 31, 2008

Staff Interim 2.96 Mr. Rumolo's affidavit at page 2, lines 18-19 refers to the functioning of the Transmission Cost Adjustor ("TCA"). (a) Please explain in detail how the TCA addresses capital expenditures related to transmission. (b) If plant additions for transmission are not included in the TCA, explain fully why not. (c) How much of the \$1 billion per year capital expenditures mentioned in the Brant affidavit (see, e.g., page 5, line 16 and elsewhere) is for transmission that would be included in the TCA? (d) How much of the approximately \$1.7 billion that Mr. Brandt says APS spent from June 28, 2007 to May 31, 2008 on ACC-jurisdictional capital projects was for transmission? (e) How much of the approximately \$1.7 billion that Mr. Brandt says (on page 5, line 25) APS spent from June 28, 2007 to May 31, 2008 on ACC-jurisdictional capital projects was for non-discretionary capital expenditures? (f) Please provide a breakout of the \$1.7 billion by type of plant; for all completed projects, show the amount of plant additions by plant account. (g) Does APS consider transmission to be ACC-jurisdictional? If not, explain fully why not. (h) Does consider the costs that it recovers in the TCA to be ACC-jurisdictional? If not, explain fully why not. (i) During any months in 2007 or 2008 did APS have any deferrals relating to the TCA? If so, please show the deferred balances relating to the TCA in each month of 2007 and 2008, by account. If not, explain fully why not.

Response:

- (a) and (b) Capital expenditures related to transmission are recoverable under the TCA to the extent that such expenditures are recoverable in the Company's wholesale transmission formula rate. The FERC-approved transmission formula rate recovers capital expenditures to the extent that the expenditure relates to a project that either already closed to service as of the yearly May 15th update to the FERC rates, or is projected to close to service in the then-current calendar year.
- (c) Transmission expenditures vary between approximately \$200 million per year and approximately \$300 million per year for 2008 through 2010. The total forecast for transmission expenditures across this

ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
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E-01345A-08-0172-INTERIM RATES
JULY 31, 2008

Staff Interim 2.96

Response Continued:

period is approximately \$800 million (see Exhibit DEB-3 from Mr. Brandt's Direct Testimony in the General Rate Case).

- (d) Please note that the \$1.7 billion discussed in Mr. Brandt's affidavit was spent from October 1, 2005 to May 31, 2008, and not from June 28, 2007 as described in the question. The period of October 1, 2005 to May 31, 2008 was chosen because it covers the time between end of the Test Year of the Company's last rate case (Decision No. 69663), and the date of Mr. Brandt's affidavit.

With that clarification, no transmission expenditures are included in the \$1.7 billion discussed in Mr. Brandt's affidavit.

- (e) See discussion above regarding the time period of the spending, and see the answer to Staff 2.12 for a discussion on discretionary versus non-discretionary capital spending.
- (f) See attached spreadsheets showing 10/1/05 thru 5/31/08 expenditures (APS13341) and plant additions (APS13342).
- (g) Since transmission costs are not included on the ACC jurisdictional Cost of Service Study (COSS), APS does not consider transmission costs to be ACC jurisdictional.
- (h) See answer to (g) above. Although costs recovered through the TCA are paid by retail rate payers, the rates which drive the TCA are set by the FERC.
- (i) APS has made no TCA specific deferrals. However, APS has reserved \$1.4 million at the FERC jurisdictional level related to the difference between originally proposed rates and those ultimately settled upon as part of the FERC rate case. This reserve will be returned to customers in the calculation of the next FERC Formula Filing that will take effect in June 2009.

Witness: David Rumolo

APS CapEx from Test Yr ended 9/30/05 through 5/31/08
Excludes expenditures for Palo Verde Unit 1 Steam Generator Replacement

	A	B	C	D	E
	Actual 4th Quarter 2005	Actual 2006	Actual 2007	Actual, Jan - May 08	Total, Q405 - 5/31/08
1 Distribution	83	356	370	140	949
2 Generation excl PV U1 SG	35	176	353	149	713
3 Other (Corporate I/S, Facilities)	13	16	37	8	74
4 Subtotal, excl Trans & PV U1 SG	131	548	760	297	1,736
5 Transmission	21	112	137	65	335
6 Palo Verde Unit 1 Steam Generator	20	-			20
7 Total APS	172	660	897	362	2,091

APS Construction Expenditures **4th Quarter 2005 thru May 2008**

	Q4 2005	2006	2007	Jan - May 2008	Total
<u>Distribution</u>					
Distribution Infrastructure	10	84	66	34	194
Cable Replacement	5	16	22	5	48
Other Reliability/Replacements	8	28	41	22	99
Customer Svc					
Meters	3	19	24	9	55
Transformers	7	40	50	14	111
Svc & Line Extensions	35	134	136	43	348
Strt Light / Dusk-Dawn	1	3	3	1	8
Schedule 3 Receipts recorded as CIAC	-	-	-	(1)	(1)
Distrib Gen'l Plant - I/S, Facilities	14	32	28	13	87
Total Distribution	83	356	370	140	949
<u>Generation</u>					
<u>Nuclear excl Steam Gen Unit 1</u>					
Nuclear Fuel	1	33	96	34	164
Power Plant Imprv - Nuc	11	31	42	16	100
Steam Gen Repl U3	2	9	41	-	52
Reactor Vessel Head Repl - U 1, 2, 3	-	-	7	3	10
Total Nuclear	14	73	186	53	326
<u>Non-Nuclear</u>					
4C	8	12	19	11	50
Cholla	4	48	88	55	195
Navajo	1	2	1	2	6
Redhawk	1	21	2	2	26
West Phx	5	14	7	6	32
Other Fossil excl Yuma Peaking Plant	2	6	3	3	14
Total Fossil excl Yuma Peaking Plant	21	103	120	79	323
Yuma Peaking Plant	-	-	47	17	64
Total Generation excl Steam Gen U1	35	176	353	149	713
Corporate facilities, I/S infrastructure, etc	13	16	35	7	71
APS M&T Info Systems	-	-	2	1	3
Total APS excl Transmission, SG-U1	131	548	760	297	1,736
Transmission	21	112	137	65	335
Steam Generator Replacement, PV Unit 1	20	-	-	-	20
Total APS	172	660	897	362	2,091

ARIZONA PUBLIC SERVICE COMPANY
Total Additions Between October 1, 2005 and May 31, 2008

Type of Plant	Account	4th Quarter 2005	2006	2007	May YTD 2008	Total
GENERAL & INTANGIBLE	(302) Franchises and Consents	105,618	524,292	43,181	-	673,091
GENERAL & INTANGIBLE	(303) Miscellaneous Intangible Plant	16,081,671	31,446,232	47,075,336	13,944,629	108,547,868
PRODUCTION	(311) Structures and Improvements	148,332	4,925,254	3,155,009	1,101,008	9,329,603
PRODUCTION	(312) Boiler Plant Equipment	2,965,180	15,171,714	50,682,418	43,885,621	112,704,933
PRODUCTION	(314) Turbogenerator Units	91,798	11,587,183	7,855,897	6,415,648	25,950,527
PRODUCTION	(315) Accessory Electric Equipment	686,204	5,577,757	4,496,952	3,030,608	13,791,521
PRODUCTION	(316) Misc. Power Plant Equipment	6,170	5,026,402	3,224,624	947,997	9,205,193
PRODUCTION	(320) Land and Land Rights	-	(414)	-	-	(414)
PRODUCTION	(321) Structures and Improvements	1,298,099	13,886,164	3,616,948	1,742,330	20,543,541
PRODUCTION	(322) Reactor Plant Equipment	69,993,552	8,102,499	3,503,210	76,198,800	157,798,062
PRODUCTION	(323) Turbogenerator Units	11,376,868	2,826,570	1,107,849	18,502,834	33,814,121
PRODUCTION	(324) Accessory Electric Equipment	(20,549)	835,332	291,094	2,042,367	3,148,244
PRODUCTION	(325) Misc. Power Plant Equipment	449,749	1,336,614	553,898	302,042	2,642,303
PRODUCTION	(326) Asset Retirement Costs for Nuclear Production	6,237,030	(17,956,065)	-	(22,821,144)	(34,540,179)
PRODUCTION	(327) Asset Retirement Costs for Hydraulic Production	-	-	(3,908,222)	-	(3,908,222)
PRODUCTION	(340) Land and Land Rights	0	(1,406)	-	-	(1,406)
PRODUCTION	(341) Structures and Improvements	764,874	2,267,221	937,327	865,366	4,634,788
PRODUCTION	(342) Fuel Holders, Products, and Accessories	71,693	(102,237)	3,825,125	521,318	4,315,899
PRODUCTION	(343) Prime Movers	172,906	(228,097)	4,306	64,196	13,311
PRODUCTION	(344) Generators	(221,275)	26,327,517	16,676,357	5,138,160	47,920,759
PRODUCTION	(345) Accessory Electric Equipment	(372,185)	1,741,482	3,892,823	64,654	5,326,764
PRODUCTION	(346) Misc. Power Plant Equipment	-	705,856	304,019	86,933	1,096,808
TRANSMISSION	(350) Land and Land Rights	125,899	8,437,339	11,963,897	1,103,385	21,650,520
TRANSMISSION	(352) Structures and Improvements	(76,874)	802,048	2,849,351	900,151	4,474,677
TRANSMISSION	(353) Station Equipment	8,482,356	35,159,439	55,136,701	19,455,487	118,233,984
TRANSMISSION	(354) Towers and Fixtures	-	89,944	357,051	186,913	633,908
TRANSMISSION	(355) Poles and Fixtures	6,849,823	11,344,264	36,197,044	17,840,232	72,031,362
TRANSMISSION	(356) Overhead Conductors and Devices	(188,022)	30,320,018	15,173,671	(16,932,098)	28,373,568
TRANSMISSION	(357) Underground Conduit	210,111	338,503	1,689,758	(280,602)	1,957,771
TRANSMISSION	(358) Underground Conductors and Devices	161,094	4,331,924	1,655,091	(660,669)	5,487,440
DISTRIBUTION	(360) Land and Land Rights	907,219	6,166,680	8,833,653	(1,051,368)	14,856,183
DISTRIBUTION	(361) Structures and Improvements	712,059	2,544,669	3,085,864	1,131,334	7,473,926
DISTRIBUTION	(362) Station Equipment	10,265,427	37,921,966	21,411,660	17,705,846	87,304,699
DISTRIBUTION	(364) Poles, Towers, and Fixtures	5,460,236	30,360,951	32,512,373	14,241,261	82,574,821
DISTRIBUTION	(365) Overhead Conductors and Devices	1,010,927	20,537,003	12,558,215	3,424,420	37,531,565
DISTRIBUTION	(366) Underground Conduit	4,357,128	21,507,740	26,134,008	11,268,227	63,267,102
DISTRIBUTION	(367) Underground Conductors and Devices	19,527,861	123,846,045	134,150,439	43,746,747	321,271,092
DISTRIBUTION	(368) Line Transformers	7,879,096	43,258,288	54,599,390	16,721,280	122,458,054
DISTRIBUTION	(369) Services	8,436,777	11,634,179	10,876,148	1,777,792	32,724,896
DISTRIBUTION	(370) Meters	3,511,866	17,715,395	23,761,745	9,690,474	54,679,480
DISTRIBUTION	(371) Installations on Customer Premises	360,691	2,077,790	3,605,872	1,145,037	7,189,490
DISTRIBUTION	(373) Street Lighting and Signal Systems	127,991	4,227,010	1,441,832	2,037,719	7,834,552
GENERAL & INTANGIBLE	(389) Land and Land Rights	0	-	103,202	(103,202)	0
GENERAL & INTANGIBLE	(390) Structures and Improvements	(1,147,713)	9,713,523	5,250,425	1,594,198	15,410,432
GENERAL & INTANGIBLE	(391) Office Furniture and Equipment	11,382,138	17,718,199	9,102,781	5,068,038	43,271,156
GENERAL & INTANGIBLE	(392) Transportation Equipment	306,450	2,710,628	2,723,379	423,431	6,163,889
GENERAL & INTANGIBLE	(393) Stores Equipment	-	1,726	-	-	1,726
GENERAL & INTANGIBLE	(394) Tools, Shop and Garage Equipment	690,570	2,293,832	2,632,102	1,153,814	6,770,318
GENERAL & INTANGIBLE	(395) Laboratory Equipment	1,327	130,588	149,187	-	281,102
GENERAL & INTANGIBLE	(396) Power Operated Equipment	73,826	185,183	125,253	970,075	1,354,337
GENERAL & INTANGIBLE	(397) Communication Equipment	2,618,154	9,845,387	13,842,254	4,816,731	31,122,526
GENERAL & INTANGIBLE	(398) Miscellaneous Equipment	167,096	5,238,162	(138,373)	370,258	5,637,143
		201,849,247	574,458,275	639,143,224	369,578,078	1,725,028,824

ARIZONA PUBLIC SERVICE COMPANY
Total Additions Between January 2008 and May 2008

Account	Additions
(301) Organization	0
(302) Franchises and Consents	0
(303) Miscellaneous Intangible Plant	13,944,629
(310) Land and Land Rights	0
(311) Structures and Improvements	1,101,008
(312) Boiler Plant Equipment	43,885,621
(313) Engines and Engine-Driven Generators	0
(314) Turbogenerator Units	6,415,648
(315) Accessory Electric Equipment	3,030,608
(316) Misc. Power Plant Equipment	947,997
(317) Asset Retirement Costs for Steam Production	0
(320) Land and Land Rights	0
(321) Structures and Improvements	1,742,330
(322) Reactor Plant Equipment	76,198,800
(323) Turbogenerator Units	18,502,834
(324) Accessory Electric Equipment	2,042,367
(325) Misc. Power Plant Equipment	302,042
(326) Asset Retirement Costs for Nuclear Production	(22,821,144)
(330) Land and Land Rights	0
(331) Structures and Improvements	0
(332) Reservoirs, Dams, and Waterways	0
(333) Water Wheels, Turbines, and Generators	0
(334) Accessory Electric Equipment	0
(335) Misc. Power Plant Equipment	0
(336) Roads, Railroads, and Bridges	0
(337) Asset Retirement Costs for Hydraulic Production	0
(340) Land and Land Rights	0
(341) Structures and Improvements	665,366
(342) Fuel Holders, Products, and Accessories	521,318
(343) Prime Movers	64,196
(344) Generators	5,138,160
(345) Accessory Electric Equipment	64,654
(346) Misc. Power Plant Equipment	86,933
(350) Land and Land Rights	1,103,385
(352) Structures and Improvements	900,151
(353) Station Equipment	19,455,487
(354) Towers and Fixtures	186,913
(355) Poles and Fixtures	17,840,232
(356) Overhead Conductors and Devices	(16,932,098)
(357) Underground Conduit	(280,602)
(358) Underground Conductors and Devices	(660,669)
(360) Land and Land Rights	(1,051,368)
(361) Structures and Improvements	1,131,334
(362) Station Equipment	17,705,646
(363) Storage Battery Equipment	0
(364) Poles, Towers, and Fixtures	14,241,261
(365) Overhead Conductors and Devices	3,424,420
(366) Underground Conduit	11,268,227
(367) Underground Conductors and Devices	43,746,747
(368) Line Transformers	16,721,280
(369) Services	1,777,792
(370) Meters	9,690,474
(371) Installations on Customer Premises	1,145,037
(372) Leased Property on Customer Premises	0
(373) Street Lighting and Signal Systems	2,037,719
(389) Land and Land Rights	(103,202)
(390) Structures and Improvements	1,594,198
(391) Office Furniture and Equipment	5,068,038
(392) Transportation Equipment	423,431
(393) Stores Equipment	0
(394) Tools, Shop and Garage Equipment	1,153,814
(395) Laboratory Equipment	0
(396) Power Operated Equipment	970,075
(397) Communication Equipment	4,816,731
(398) Miscellaneous Equipment	370,258
Total Additions between Jan08 and May08	309,578,076

ARIZONA PUBLIC SERVICE COMPANY
Total Additions Between January 2007 and December 2007

Account	Additions
(301) Organization	0
(302) Franchises and Consents	43,181
(303) Miscellaneous Intangible Plant	47,075,336
(310) Land and Land Rights	0
(311) Structures and Improvements	3,155,009
(312) Boiler Plant Equipment	50,682,418
(313) Engines and Engine-Driven Generators	0
(314) Turbogenerator Units	7,855,887
(315) Accessory Electric Equipment	4,486,952
(316) Misc. Power Plant Equipment	3,224,624
(317) Asset Retirement Costs for Steam Production	0
(320) Land and Land Rights	0
(321) Structures and Improvements	3,616,948
(322) Reactor Plant Equipment	3,503,210
(323) Turbogenerator Units	1,107,849
(324) Accessory Electric Equipment	291,094
(325) Misc. Power Plant Equipment	553,898
(326) Asset Retirement Costs for Nuclear Production	0
(330) Land and Land Rights	0
(331) Structures and Improvements	0
(332) Reservoirs, Dams, and Waterways	0
(333) Water Wheels, Turbines, and Generators	0
(334) Accessory Electric Equipment	0
(335) Misc. Power Plant Equipment	0
(336) Roads, Railroads, and Bridges	0
(337) Asset Retirement Costs for Hydraulic Production	(3,908,222)
(340) Land and Land Rights	0
(341) Structures and Improvements	937,327
(342) Fuel Holders, Products, and Accessories	3,825,125
(343) Prime Movers	4,306
(344) Generators	16,676,357
(345) Accessory Electric Equipment	3,892,823
(346) Misc. Power Plant Equipment	304,019
(347) Asset Retirement Costs for Other Production	0
(350) Land and Land Rights	11,983,897
(352) Structures and Improvements	2,849,351
(353) Station Equipment	55,136,701
(354) Towers and Fixtures	357,051
(355) Poles and Fixtures	36,197,044
(356) Overhead Conductors and Devices	15,173,671
(357) Underground Conduit	1,889,758
(358) Underground Conductors and Devices	1,655,091
(360) Land and Land Rights	8,833,653
(361) Structures and Improvements	3,085,864
(362) Station Equipment	21,411,660
(363) Storage Battery Equipment	0
(364) Poles, Towers, and Fixtures	32,512,373
(365) Overhead Conductors and Devices	12,559,215
(366) Underground Conduit	26,134,008
(367) Underground Conductors and Devices	134,150,439
(368) Line Transformers	54,599,390
(369) Services	10,876,148
(370) Meters	23,761,745
(371) Installations on Customer Premises	3,605,972
(372) Leased Property on Customer Premises	0
(373) Street Lighting and Signal Systems	1,441,832
(374) Asset Retirement Costs Distribution Plant	0
(389) Land and Land Rights	103,202
(390) Structures and Improvements	5,250,425
(391) Office Furniture and Equipment	9,102,781
(392) Transportation Equipment	2,723,379
(393) Stores Equipment	0
(394) Tools, Shop and Garage Equipment	2,632,102
(395) Laboratory Equipment	149,187
(396) Power Operated Equipment	125,253
(397) Communication Equipment	13,842,254
(398) Miscellaneous Equipment	(138,373)
Total Additions between Jan07 and Dec07	639,143,219

ARIZONA PUBLIC SERVICE COMPANY
Total Additions Between January 2006 and December 2006

Account	Additions
(301) Organization	0
(302) Franchises and Consents	524,292
(303) Miscellaneous Intangible Plant	31,446,232
(310) Land and Land Rights	0
(311) Structures and Improvements	4,925,254
(312) Boiler Plant Equipment	15,171,714
(313) Engines and Engine-Driven Generators	0
(314) Turbogenerator Units	11,587,183
(315) Accessory Electric Equipment	5,577,757
(316) Misc. Power Plant Equipment	5,026,402
(317) Asset Retirement Costs for Steam Production	0
(320) Land and Land Rights	(414)
(321) Structures and Improvements	13,886,164
(322) Reactor Plant Equipment	8,102,499
(323) Turbogenerator Units	2,826,570
(324) Accessory Electric Equipment	835,332
(325) Misc. Power Plant Equipment	1,336,614
(326) Asset Retirement Costs for Nuclear Production	(17,956,065)
(330) Land and Land Rights	0
(331) Structures and Improvements	0
(332) Reservoirs, Dams, and Waterways	0
(333) Water Wheels, Turbines, and Generators	0
(334) Accessory Electric Equipment	0
(335) Misc. Power Plant Equipment	0
(336) Roads, Railroads, and Bridges	0
(337) Asset Retirement Costs for Hydraulic Production	0
(340) Land and Land Rights	(1,406)
(341) Structures and Improvements	2,267,221
(342) Fuel Holders, Products, and Accessories	(102,237)
(343) Prime Movers	(228,097)
(344) Generators	26,327,517
(345) Accessory Electric Equipment	1,741,462
(346) Misc. Power Plant Equipment	705,856
(347) Asset Retirement Costs for Other Production	0
(350) Land and Land Rights	8,437,339
(352) Structures and Improvements	802,048
(353) Station Equipment	35,159,439
(354) Towers and Fixtures	89,844
(355) Poles and Fixtures	11,344,264
(356) Overhead Conductors and Devices	30,320,018
(357) Underground Conduit	338,503
(358) Underground Conductors and Devices	4,331,924
(359) Roads and Trails	0
(359.1) Asset Retirement Costs for Transmission Plant	0
(360) Land and Land Rights	6,166,680
(361) Structures and Improvements	2,544,669
(362) Station Equipment	37,921,966
(363) Storage Battery Equipment	0
(364) Poles, Towers, and Fixtures	30,360,951
(365) Overhead Conductors and Devices	20,537,003
(366) Underground Conduit	21,507,740
(367) Underground Conductors and Devices	123,846,045
(368) Line Transformers	43,258,288
(369) Services	11,634,179
(370) Meters	17,715,395
(371) Installations on Customer Premises	2,077,790
(372) Leased Property on Customer Premises	0
(373) Street Lighting and Signal Systems	4,227,010
(374) Asset Retirement Costs Distribution Plant	0
(389) Land and Land Rights	0
(390) Structures and Improvements	9,713,523
(391) Office Furniture and Equipment	17,718,199
(392) Transportation Equipment	2,710,628
(393) Stores Equipment	1,726
(394) Tools, Shop and Garage Equipment	2,293,832
(395) Laboratory Equipment	130,588
(396) Power Operated Equipment	185,183
(397) Communication Equipment	9,845,387
(398) Miscellaneous Equipment	5,239,162
Total Additions between Jan06 and Dec06	574,458,275

ARIZONA PUBLIC SERVICE COMPANY
Total Additions Between Oct 2005 and December 2005

Account	Additions
(301) Organization	0
(302) Franchises and Consents	105,818
(303) Miscellaneous Intangible Plant	15,081,871
(310) Land and Land Rights	0
(311) Structures and Improvements	148,332
(312) Boiler Plant Equipment	2,965,180
(313) Engines and Engine-Driven Generators	0
(314) Turbogenerator Units	91,798
(315) Accessory Electric Equipment	686,204
(316) Misc. Power Plant Equipment	6,170
(317) Asset Retirement Costs for Steam Production	0
(320) Land and Land Rights	0
(321) Structures and Improvements	1,298,099
(322) Reactor Plant Equipment	69,993,552
(323) Turbogenerator Units	11,376,868
(324) Accessory Electric Equipment	(20,549)
(325) Misc. Power Plant Equipment	449,749
(326) Asset Retirement Costs for Nuclear Production	6,237,030
(330) Land and Land Rights	0
(331) Structures and Improvements	0
(332) Reservoirs, Dams, and Waterways	0
(333) Water Wheels, Turbines, and Generators	0
(334) Accessory Electric Equipment	0
(335) Misc. Power Plant Equipment	0
(336) Roads, Railroads, and Bridges	0
(337) Asset Retirement Costs for Hydraulic Production	0
(340) Land and Land Rights	0
(341) Structures and Improvements	764,874
(342) Fuel Holders, Products, and Accessories	71,693
(343) Prime Movers	172,906
(344) Generators	(221,275)
(345) Accessory Electric Equipment	(372,185)
(346) Misc. Power Plant Equipment	0
(347) Asset Retirement Costs for Other Production	0
(350) Land and Land Rights	125,899
(352) Structures and Improvements	(76,874)
(353) Station Equipment	8,482,356
(354) Towers and Fixtures	0
(355) Poles and Fixtures	6,649,823
(356) Overhead Conductors and Devices	(188,022)
(357) Underground Conduit	210,111
(358) Underground Conductors and Devices	161,094
(359) Roads and Trails	0
(359.1) Asset Retirement Costs for Transmission Plant	0
(360) Land and Land Rights	907,219
(361) Structures and Improvements	712,059
(362) Station Equipment	10,265,427
(363) Storage Battery Equipment	0
(364) Poles, Towers, and Fixtures	5,460,236
(365) Overhead Conductors and Devices	1,010,927
(366) Underground Conduit	4,357,128
(367) Underground Conductors and Devices	19,527,861
(368) Line Transformers	7,879,098
(369) Services	8,436,777
(370) Meters	3,511,866
(371) Installations on Customer Premises	360,691
(372) Leased Property on Customer Premises	0
(373) Street Lighting and Signal Systems	127,991
(374) Asset Retirement Costs Distribution Plant	0
(389) Land and Land Rights	0
(390) Structures and Improvements	(1,147,713)
(391) Office Furniture and Equipment	11,382,138
(392) Transportation Equipment	306,450
(393) Stores Equipment	0
(394) Tools, Shop and Garage Equipment	690,570
(395) Laboratory Equipment	1,327
(396) Power Operated Equipment	73,826
(397) Communication Equipment	2,618,154
(398) Miscellaneous Equipment	167,098
	<u>201,649,247</u>

ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172
JULY 31, 2008

Staff Interim 2.50 Provide an exhibit showing APS's bond ratings over the last 5 years from the various rating agencies. For each year that there is a change, either up or down, provide a detailed explanation of why that change occurred.

Response: See the attached exhibit, bates labeled APS13014, which shows APS's long-term debt ratings from 2004 to the present, along with the dates on which any of the ratings changed. Also attached is each of the applicable ratings downgrade articles, which provide a detailed explanation of why the change occurred. The following three articles are attached:

1. Standard and Poor's Rating Direct article from December 21, 2005 "Research Update: Pinnacle West Capital's, Arizona Public Service's Ratings Lowered To 'BBB-'; Outlook Stable" – APS13011
2. Fitch Ratings article from January 30, 2006 "Fitch Lowers PNW's and APS' Sr. Unsecured Ratings to 'BBB-' & 'BBB', Respectively; Outlook Stable" – APS13012
3. Moody's Investor Service article from April 27, 2006 "Moody's Downgrades Pinnacle West (Issuer Rating to Baa3) and Arizona Public Service (Sr.UNS. to Baa2); Ratings of Pinnacle West Remain Under Review – APS13013

Witness: Donald Brandt

APS Senior Unsecured Ratings History

APS	Current	12/31/2007	12/31/2006	12/31/2005	12/31/2004
Moody's	Baa2	Baa2	Baa2	Baa1	Baa1
S&P	BBB-	BBB-	BBB-	BBB-	BBB
Fitch	BBB	BBB	BBB	BBB+	BBB+

Moody's downgrade on April 27, 2006
S&P downgrade on December 21, 2005
Fitch downgrade on January 30, 2006

ARIZONA CORPORATION COMMISSION
STAFFS SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172 – INTERIM RATES
JULY 31, 2008

Staff Interim 2.38 Provide a description of all provisions in all APS bond indentures that address minimum financial ratios and/or default conditions.

Response: There are no provisions in any of APS's indentures that address minimum financial ratios. Some events of default are:

- Non-payment of principal, interest or fees;
- Non-compliance with covenants;
- Bankruptcy and insolvency events.

For a more complete list of events of default and their descriptions, please see the attached document, APS13344.

Witness: Donald Brandt

ARIZONA CORPORATION COMMISSION
STAFFS SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172 – INTERIM RATES
JULY 31, 2008

Staff Interim 2.39 Provide a description of all provisions in all APS credit arrangements that address minimum financial ratios and/or default conditions.

Response: There are two provisions in APS's credit arrangements that address minimum financial ratios. The first one is the requirement that APS maintain an Interest Coverage of at least two times, and the second one requires that the amount of debt does not exceed 65% of total capitalization.

Some events of default are:

- Non-payment of principal, interest or fees;
- Material misrepresentations;
- Non-compliance with covenants;
- Non-payment under significant operating leases;
- Bankruptcy and insolvency events;
- Judgments against APS significantly exceeding insurance coverage;
- Change in control of PWCC or APS;
- ERISA violations.

For a more complete list of events of default and their descriptions, please see attached credit agreements:

1. \$400 Million APS Revolving Credit Facility – APS13031
2. \$500 Million APS Revolving Credit Facility – APS13032
3. 2005 Amendment to Coconino 1997 A Reimbursement Agreement – APS13033
4. Coconino 1994 Series A Reimbursement Agreement – APS13034
5. 2005 Amendment to Coconino 1998 A Reimbursement Agreement – APS13035
6. Coconino 1998 Series A Reimbursement Agreement – APS13036
7. Farmington Reimbursement Agreement – APS13037
8. Emerson S-L Reimbursement Agreement – APS13038
9. SecPac S-L Reimbursement Agreement – APS13039

Witness: Donald Brandt

ARIZONA CORPORATION COMMISSION
STAFF'S FIRST SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE
SCHEDULES DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF
RETURN
E-01345A-08-0172
JUNE 24, 2008

Staff 1.13: Briefly provide the purpose of the existing 2007 PSA surcharge?

Response:

In Decision No. 69663, the Commission permitted the 2007 PSA Adjustor to continue until it had collected a \$46 million balance of uncollected fuel and purchased power costs. APS expects that the 2007 PSA Adjustor will have collected that historical balance at the end of the July billing cycle.

In its Motion, APS does not seek to continue the PSA Adjustor beyond its intended expiration. Rather, APS seeks approval of an entirely new Interim Base Rate Surcharge of the same amount. The new Interim Base Rate Surcharge, as explained in the Company's Motion, would not be devoted to the collection of fuel and purchased power costs (as was the 2007 PSA Adjustor), but would instead be used to ameliorate the detrimental impact of the Company's rising non-fuel costs until the Commission has the opportunity to enter an order on the Company's permanent rate request in the underlying general rate case.

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RESEARCH

Credit FAQ: Credit Issues Expected To Continue For Pinnacle West Capital Corp. And Arizona Public Service Co.

Publication date:
Primary Credit Analyst:

24-Jan-2006
Anne Selting, San Francisco (1) 415-371-5009;
anne_selting@standardandpoors.com

On Dec. 21, 2005, Standard & Poor's Ratings Services lowered the corporate credit ratings on Arizona Public Service Co. (APS) and its parent, Pinnacle West Capital Corp. (PWCC) by one notch to 'BBB-'. This action reflected three factors: growing fuel and purchased power deferrals, which are weakening financial performance in 2005 and 2006, the lack of action by the Arizona Corporation Commission (ACC) in 2005 to address a portion of these deferrals through a special surcharge, and the likelihood of delays in the completion of APS' recent general rate case (GRC) filing, which suggest that financial weakening may extend into 2007.

Standard & Poor's stated at the time that any adverse regulatory developments or continued delays in resolving the pending surcharge request could trigger another rating action, which could include a revision of the stable rating outlook to negative, placing the company's debt rating on CreditWatch with negative implications, or lowering the rating to non-investment grade.

Frequently Asked Questions

How large are APS' deferrals of fuel and purchased power?

At Jan. 31, 2006, APS' estimated fuel and purchased power deferrals are expected to be about \$165 million. These deferrals are accumulating because APS' base electric rates are set to reflect 2003 costs, and power and natural gas costs have far exceeded these rates. APS collects 2.0473 cents per kilowatt-hour (kWh) in rates for these costs, but for the 12 months ended September 2005, its actual cost averaged 2.701 cents per kWh. Because these rates will not be updated until the completion of APS' recently filed GRC or the emergency interim request, deferrals will likely continue to accumulate in 2006 and into 2007.

The amount by which 2006 actual fuel and purchased power costs will exceed the authorized expenditures will be a function of retail sales growth, commodity costs, the operational performance of APS' generation assets, and the fuel-in-base factor. Standard & Poor's has estimated that, at year-end 2006, the utility will likely incur an additional \$250 million in fuel and purchased power costs that are not recoverable in base electric rates. The sum of balances to date of \$165 million plus the expected incremental deferrals of \$250 million total \$415 million; however, because APS has the potential to collect some of its 2005 balances through a power supply adjuster (PSA) beginning April 1, year-end 2006 deferrals on the utility's balance sheet will not reach that level.

What are the ways that APS could recover its expected deferrals?

Under the terms of a settlement reached in APS' 2003 rate case approved by the ACC in April 2005, the PSA may be increased as much as four mills per kWh (a cap over the life of the PSA) on April 1, 2006. Using 2005 retail sales, and assuming a 4.5% growth rate (which is consistent with recent results), the four mills should yield about \$125 million in rate relief on an annualized basis, or about \$83 million for the eight months of 2006. Thus, as a rough approximation, APS' deferred balance would be about \$330 million at year-end 2006.

On Jan. 17, the chairman of the ACC introduced a proposal to accelerate the PSA adjustment to Feb. 1. If this were approved by the ACC, an additional two months of the PSA would provide about \$20 million in incremental revenues (e.g., roughly \$125 million multiplied by two-twelfths of the year) in 2006. Thus, if the Hatch-Miller amendment moves forward, year-end 2006 deferred balances will be closer to about \$310 million. The amendment is expected to be discussed on Jan. 24.

Additional relief could be provided if the ACC grants APS' request to recover \$80 million by means of a two-year special surcharge that would increase retail rates by about 2%. On Jan. 4, an administrative law

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judge issued a decision indicating that APS' surcharge application is premature until the company's first power supply adjustment occurs in April. An ACC vote is scheduled for Jan. 24. Standard & Poor's current assumption is that the surcharge will be approved by the ACC, but will be delayed until July 1, 2006. A surcharge implemented at this time would provide roughly an additional \$20 million to the company in 2006. If it were implemented sooner, the impact on deferrals would be relatively small, providing about \$3 million in each month it is in place during 2006. If the Hatch-Miller amendment were approved and a surcharge was implemented and approved for Feb. 1, the two measures collectively would bring between \$50 million-\$57 million in relief. Accordingly, relative to the year-end expected balances, an accelerated surcharge and PSA, if granted, will reduce deferrals but only by about 20% in the best-case scenario.

What is the status with APS' emergency interim filing?

On Jan. 6, 2006, APS filed a \$299 million request for emergency fuel and purchased power-related rate relief. Any amounts, if granted, would be subject to future prudence review. As part of a procedural conference on Jan. 12, four of the five commissioners questioned the definition an emergency and whether relief is justified. Based on the strong views expressed, it appears unlikely that the filing has support. On Jan. 19, a procedural schedule was set that should allow for a decision in April 2006. Standard & Poor's forecast estimates do not assume emergency relief is granted.

Are there credit concerns related to APS' rate cap?

Balancing these potential sources of rate relief are additional adverse financial effects that could occur for APS if its "hard cap" of \$776 million is not lifted. The cap is part of APS' 2004 settlement, approved by the ACC in April 2005, which restricts the total amount of annual fuel and purchased power costs that can be collected in retail rates. APS expects that its fuel and purchased power costs will exceed the cap in the fourth quarter of 2006, and has indicated publicly that its estimated fuel costs will exceed \$800 million. As part of its emergency interim filing, APS has requested that the cap be removed. If the cap is not lifted, any amounts above \$776 million would be unrecoverable, putting further pressure on cash flows.

What assumptions does Standard & Poor's make about the performance of APS' generation assets in estimating deferred balances?

Standard & Poor's estimates assume normal operational performance of APS' generation fleet. Forced outages could increase deferred balances. Palo Verde unit 1 is in the process of exiting an outage that occurred last week due to pipe vibrations within the emergency cooling system. APS took the unit offline last week to install clamps in an effort to stop the excess vibrations. From late December until Jan. 17, unit 1 has operated at about 30% capacity while crews have tried to fix the problem, which followed the completion of the unit's exit from a refueling and maintenance outage begun in the fall of 2005. The plant is expected to maintain approximately this level of reduced capacity while additional repairs are considered. Replacement power costs have been incurred in association with this last outage, and could build, depending on the timeline for a solution to be implemented. These and any future costs are not part of Standard & Poor's deferred estimates.

How are these estimated deferrals expected to affect 2005 and 2006 financial performance, especially in the context of the credit benchmarks at the 'BBB-' rating?

Year-end results for 2005 are not yet available, but Standard & Poor's expects that 2005 and 2006 results will be on par with the 12 months ending Sept. 30, 2005, when consolidated adjusted funds from operations (FFO) to total debt was 14.8%. FFO to total debt is an important metric for Standard & Poor's, and at a business profile of '6' (on a 10-point scale where '1' is excellent and '10' vulnerable), it reflects a below-investment-grade performance. For the 12 months ending Sept. 30, 2005, FFO interest coverage was 3.3x, which is reasonable for the current rating. Adjusted total debt to total capitalization was 53.1%, and is solid for the current rating.

Performance in 2007 will be heavily dependent on when the GRC is resolved. APS filed on Nov. 4, 2005, for a \$409.1 million (or 19.9%) rate increase, the majority of which is related to fuel and purchased power costs. Typically, the ACC certifies the application as complete within 30 days, and the case commences. But in early December 2005, the ACC requested that the company re-file its application using a test year ending Sept. 30, 2005, rather than the Dec. 31, 2004 data that APS used. The updated application is expected to be re-submitted to the ACC on Jan. 31, 2006.

As a result, the case will not begin until early March 2006, suggesting that an outcome will be delayed roughly three months from the original schedule, which envisions a ruling by early 2007. Recent public statements by the ACC indicate that spring 2007 may be the earliest a decision could be expected. But there is little precedent in Arizona that would suggest a year-long rate case is likely. A more conservative estimate would assume mid-2007. This could be a credit concern because if permanent rate relief is not in place prior to the peak summer season, financial recovery could also be stalled in 2007.

How is the company's liquidity?

Unaudited consolidated cash and investments stood at roughly \$150 million as of Dec. 31, 2005. PWCC

and APS also maintain a total of \$700 million in revolving credit facilities, which had approximately \$15 million of usage at year-end 2005 for miscellaneous letters of credit. Standard & Poor's preliminary assessment is that the company's credit lines should be sufficient to support working capital needs, purchases of gas and power, as well as fund margining and collateral requirements for trading operations. As of Dec. 31, 2005, PWCC and APS comfortably met their loan covenant requirements.

PWCC has a \$300 million dollar maturity on April 1, which it plans to refinance. Adverse regulatory actions could affect the costs of borrowing or even access to the capital markets, although this is not currently seen as a significant threat.

APS' reliance on purchases and gas-fired peaking capacity during the winter is low; however, this is seasonal. Fuel and purchased power expenses are anticipated to be accrued faster in July 2006 through September 2006. Standard & Poor's is conducting a more detailed liquidity assessment, which will be completed once more clarity is provided on how the ACC is expected to address interim rate relief requests. APS has a significant hedging program and 85% of its 2006 power and gas requirements are hedged. APS and PWCC are currently holding counterparties' collateral as a result of their in-the-money hedged positions.

Could cost saving measures, or the sale of nonregulated assets by PWCC assist in restoring credit quality?

The ACC has requested that the company explain what cost reductions it is making to compensate for the fact that its retail rates are not aligned with production costs. In response, the company cancelled bonuses for its corporate officers, and is certain to investigate additional cost-savings measures. While these actions may address other public policy issues of concern to the ACC, from a credit standpoint cost cutting measures are unlikely to materially alleviate APS' sagging financial performance.

The deferred balances stem from fuel and purchased power costs that the utility incurred to serve retail loads. APS earns no margin on these expenses; they are simply passed straight through to customers. Similar to the circumstances that other western utilities have faced in recent years, APS' fuel and purchased costs substantially exceed the amount currently recoverable in rates. The company may be able to temporarily subsidize the cost of serving retail loads by reducing expenses in other parts of the company, selling other PWCC assets, or issuing debt, but such a strategy is not sustainable, and could very well result in longer-term adverse consequences for the company.

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RATINGSDIRECT®

June 25, 2008

Summary:

Arizona Public Service Co.

Primary Credit Analyst:

Anne Selting, San Francisco (1) 415-371-5009; anne_selting@standardandpoors.com

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Outlook

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656582 : 300289673

Summary:

Arizona Public Service Co.

Credit Rating: BBB-/Stable/A-3

Rationale

Standard & Poor's Ratings Services today affirmed the 'BBB-' corporate credit rating assigned to Pinnacle West Capital Corporation (PWCC) and its utility, Arizona Public Service. The outlook is stable. The consolidated credit ratings of PWCC primarily reflect the operations of its largest subsidiary, APS, a regulated, electric utility serving about 1.1 million customers within its service territory, which spans roughly two-thirds of Arizona and includes about half of the Phoenix MSA. We view the business profile of PWCC and APS to be 'strong'. While the company continues to benefit from a number of favorable attributes including a good service territory, a reasonably balanced power supply portfolio and a good PSA. However, APS' continues to face significant regulatory challenges.

APS provided the company with about 92% of its consolidated net income in 2007. SunCor, PWCC's real estate development company, provided about 4%, but due to the significant real estate slowdown in the southwest, it is unlikely it will be a meaningful contributor of cash flows or income over the next several years. (Prior to the real estate downturn, our forecasts have conservatively limited earnings from this subsidiary due to the cyclic nature of its cash flows.) Other subsidiary operations include Pinnacle West Trading and Marketing, which contributed about 4% of consolidated net income in 2007. This subsidiary has since last year been minimizing trading operations. Its largest contract was serving all-requirements load for UNS Electric Inc., which ended in May 2008.

We view the financial profile of PWCC and APS to be 'aggressive', which reflects: year-end debt to total capitalization of 57% (adjusted for items such as power purchases and operating leases); heavy capital spending that is expected to drive negative free operating cash flow for the foreseeable future; cash flow weakness as a function of protracted rate cases; and, while modest, the presence of unregulated activities, which can be unpredictable in their earnings contributions.

Because the preponderance of cash flows for consolidated operations stems from APS, we expect financial performance will continue to be heavily dependent on regulatory outcomes. The conclusion of APS' last general rate case in June 2007 (filed in November 2005 and revised in early 2006) provided the company with mechanisms to recover legacy deferrals and speed the recovery of fuel costs going forward. This rate relief, in place for the last half of 2007, assisted the company in maintaining credit metrics roughly in line with past performance. Funds from operations (FFO) to total debt was about 16% at year-end, with FFO interest coverage around 4x. On a trailing 12-month basis the company's performance has been slightly above these levels, due in part to the federal tax stimulus package approved by the U.S. Congress earlier this year, which is expected to increase deferred taxes (which are added back to FFO and thus increase this total).

We expect APS to be in more or less continuous rate case mode for the next few years. Given APS' capital spending program, forecasted to be about \$1.1 billion annually through 2010, the utility will need to file regular general rate cases to manage recovery of its investment. The use of a historical test year in Arizona, coupled with the fact that fully litigated rate cases take between 18 to 24 months to complete, is expected to result in no meaningful improvement in financial performance through 2009 and possibly beyond, depending on the timing and the

Summary: Arizona Public Service Co.

outcome of the company's current case.

APS filed its current rate case in March 2008. ACC staff requested that the company revise its filing to reflect a test year ending Dec. 31, 2007 (as opposed to the originally filed version based on a Sept. 30, 2007, test year). The revised case has not been officially certified by the ACC, but certification is expected by July 2. Unlike the company's last rate case, in which \$315 million of the \$322 million of rate relief granted was for fuel and power-related costs, the majority of the current case is for nonfuel expenditures.

While the revised case increased the company's request to \$278 million (about an 8.5% increase, excluding the company's request that customers be assessed about \$53 million in impact fees), the re-filing means that is unlikely the ACC will reach an outcome in the case before October 2009, and because the majority of APS' sales occur in the summer months, the company's financial performance could weaken in 2009.

This month, the company requested that the ACC allow it to continue to collect a \$0.004/kWh charge that it has been collecting in 2007 to recover legacy purchased power and fuel deferrals. Given that the portion of deferred costs associated with this surcharge is due to be paid by July or August, APS has asked that the ACC continue the charge, but authorize collection as an interim base rate increase, subject to refund as part of the resolution of its rate case, expected in fall 2009. (Last year, the ACC approved similar relief for Tucson Electric Power in its pending rate case settlement when it granted the southern Arizona utility the opportunity to continue to collect charges related to a competitive transition charge, or CTC, while its rate case is pending.) While retail customers would essentially see no rate increase because APS is asking to continue the surcharge as an interim increase, it is unclear what action the ACC will take. A vote could occur as early as late summer.

In 2008, we expect a procedural schedule to be established for the APS rate case, and greater clarity around the timing of an outcome will be available once this is issued. Of note is that three of the five commissioners are facing term limits and will no longer be on the ACC beginning in 2009. Commissioners are popularly elected and about a dozen candidates have announced they will run for the November election. As a result, a majority of the commissioners presiding now will not be on the commission when an APS rate case ruling is rendered. What this means for credit quality is unclear.

APS was successful earlier this year in receiving approval for a change in its line extension policies, which eliminates the free footage allowance that used to be available for customers. As a result, the portion of the company's capital expenditures associated with new line extensions will be offset with contributions in aid of construction (CIAC). This is favorable and year to date ended March 31, 2008, had added about \$10 million in incremental cash flows to the company. Because it is booked under investing activities, cash flow metrics are not improved, but we recognize the significant benefit of APS receiving upfront cash from customers to meet a portion of its distribution capital investment plans. Future cash flows from customers in the form of CIAC will depend on the number of new meter sets, which are significantly off year to date due to the poor real estate market in Arizona and a slowing economy generally.

APS has a well-diversified power supply portfolio that in 2007 consisted of about 22% nuclear generation, 37% coal generation, approximately 18% owned gas generation, and the balance, about 23%, of purchases. We would expect the company's purchased power obligations to steadily climb due to the fact that APS is under a self build moratorium until 2015. APS will also need to meet relatively stringent renewable portfolio standards (RPS). It has in place a surcharge to pass through to customers the costs of RPS compliance.

Summary: Arizona Public Service Co.

Palo Verde performance has stabilized, and it has a plan in place to address NRC concerns. As of the first quarter of 2008, the combined capacity factors for all three Palo Verde units was 93%, as compared with 79% for 2007 (which reflects in part an extended planned outage to replace steam generators at unit 3) and 71% in 2006, which largely reflects unplanned outages at unit 1 related to excessive vibration that occurred when that unit exited its extended outage for refueling and replacement of steam generators. Palo Verde Unit 3 remains in the NRC's "multiple/repetitive degraded cornerstone" column of the NRC's Action matrix, which subjects all three Palo Verde units to enhanced NRC inspection regime. Preliminary work in support of this took place throughout the summer of 2007. In February, the NRC issued its inspection report, which determined the plant was operating safely but which also outlined an improvement plan for APS. In late March, APS in turn submitted to the NRC a final improvement plan addressing issues raised in the NRC inspection report. While the nuclear units appear to be on a path to improve operational performance and restore NRC confidence in the operational and safety standards at the plant, this will remain an area of concern until the NRC removes its degraded designation.

Short-term credit factors

APS and PWCC's short-term rating is 'A-3'. Liquidity is adequate. Pinnacle West has \$18 million of cash and cash equivalents, and total credit facilities of nearly \$1.4 billion, with approximately \$943 million available as of March 31, 2008. In October 2007, APS received approval from ACC to increase its authorized short-term debt borrowing capacity by \$500 million, and long-term debt borrowing capacity by \$1 billion. This will help address the needs of its growing customer base, and the increasing requirement for natural gas and purchased power.

Pinnacle West had close to \$185 million available under its \$300 million unsecured revolving credit facility that expires in December 2010. APS had \$682 million available under its two unsecured revolving credit facilities, \$400 million of which expires in December 2010, and \$500 million in September 2011. SunCor has two credit facilities expiring in October and December 2008 that total \$170 million and approximately \$76 million, respectively, available as of September 2007.

Discretionary cash flow is expected to be negative for 2008 due to APS' capital expenditure plans. Excluding the remarketing of APS' pollution control debt, neither PWCC nor APS has any significant debt obligations maturing until 2011.

Outlook

The stable outlook reflects our expectation that consolidated cash flow volatility has been tamped down by the ACC's approval of a stronger PSA that speeds the recovery of fuel costs, but consolidated financial performance will continue to be challenged by regulatory lag at APS, which could be moderated by APS' pending interim rate request. The stable outlook is premised on no meaningful adverse changes in the company's business risks and continued financial performance that is not significantly weaker than 2007 results. Equity issuances will be expected to balance the capital structure of the company as APS continues to invest heavily in infrastructure. Ratings could be lowered to speculative grade if the company is not able to overcome the challenge of ensuring timely recovery of its prudently incurred costs through rate increases approved by the ACC. Given these challenges, and that presented by NRC scrutiny of Palo Verde, we see little potential for positive movement in the ratings or outlook.

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Fitch : Info Center : Press Releases

Fitch Lowers PNW & APS' Sr. Unsecured Ratings to 'BBB-' & 'BBB', Respectively; Outlook StableRatings

30 Jan 2006 4:23 PM (EST)

Fitch Ratings-New York-30 January 2006: Fitch Ratings has lowered Pinnacle West Capital's (PNW) long- and short-term ratings. At the same time, Fitch has lowered Arizona Public Service Company's (APS) long-term ratings, while affirming its commercial paper rating. The securities of PNW and APS have been removed from Rating Watch Negative, where they were placed Jan. 6, 2006. The Rating Outlook is Stable. The following actions are effective immediately:

Pinnacle West Capital:

- Issuer default rating (IDR) downgraded to 'BBB-' from 'BBB';
- Senior unsecured debt downgraded to 'BBB-' from 'BBB';
- Commercial Paper downgraded to 'F3' from 'F2'.

The Rating Outlook is Stable.

Arizona Public Service Co.

- IDR downgraded to 'BBB-' from 'BBB';
- Senior unsecured debt downgraded to 'BBB' from 'BBB+';
- Commercial Paper affirmed at 'F2'.

The Rating Outlook is Stable.

Approximately \$3.8 billion of debt is affected by the rating actions.

The rating actions and Stable Rating Outlook reflect the resolution of APS' power supply adjustor (PSA) proceedings by the Arizona Corporation Commission (ACC) and the utility's significant exposure to high and rising natural gas commodity costs. The commodity exposure is a function of a generating capacity mix, about half of which is natural gas fired, and rapid service territory load growth, which is likely to be met predominantly by natural gas-fired resources. The revised ratings also consider the operational risk and asset concentration of the Palo Verde nuclear plant. The facility has experienced intermittent operating problems over the past year and a sustained, unscheduled outage at the plant could lead to further negative rating actions.

The ACC decision in the PSA proceedings, issued on Jan. 25, 2006, has positive and negative implications for PNW and APS' creditworthiness. The commission's decision to accelerate the effective date of the PSA rate to Feb. 1 from April 1, along with the removal of the \$776 million annual power supply cost limit, were constructive developments in Fitch's view. However, the ACC bench order rejecting APS's \$80 million surcharge request on procedural grounds and restriction of PSA adjustments to an annual reset is less favorable than Fitch had anticipated in its previous ratings and is a significant source of concern for PNW and APS fixed-income investors. The fact that there is no vehicle within the PSA protocol to recover supply costs more frequently than annually during periods of sustained high and rising energy costs subjects APS to significant cash flow volatility and working capital requirements. Such costs would be exacerbated in a meaningful way by an extended outage of a base load nuclear- or coal-fired generating facility during periods of peak demand. The only option to recover fuel and purchase power costs above amounts determined annually in the PSA would be an emergency rate filing, in which the timing and amount of rate relief would be uncertain.

It is Fitch's understanding that energy cost deferrals in a particular year of up to four mills per kilowatt hour (approximately \$110 million-\$115 million on an annual run rate) will be recovered through an annual PSA rate adjustment that will recover those costs over the following 12 months. The surcharge is expected to facilitate recovery of costs in excess of the four mills per kilowatt hour limit over a time horizon to be determined by the commission.

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ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172
JULY 31, 2008

Staff Interim 2.56 Provide all quantitative analysis that APS has concerning the amount of additional annual revenues it would take to raise its bond rating up by one step.

Response: APS has not prepared such quantitative analyses. The Company's interim rate request and general rate case request are both needed in order to maintain current ratings levels and would not, in and of themselves, raise its ratings by any degree.

Witness: Donald Brandt

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E-01345A-08-0172
JULY 31, 2008

Staff Interim 2.55 Provide all quantitative analysis that APS has concerning the impact of bond ratings on cost of capital. Include all Excel files and supporting calculations.

Response: Attached as APS13015 is the impact of bond ratings on cost of capital. See also Donald E. Brandt's affidavit and response to 2.3.

Witness: Donald Brandt

	Bond Rating ⁽¹⁾	
	BBB	Below Investment Grade
1999	7.98%	9.44%
2000	7.55%	9.78%
2001	7.26%	8.95%
2002	6.44%	16.11%
2003	4.75%	7.56%
2004	4.87%	6.69%
2005	5.53%	6.88%
2006	5.87%	6.80%
2007	5.94%	8.15%

Difference between BBB and High Yield:

Nine Year Avg. (1999-2007)	2.68%
Eight Year Avg. (2000-2007)	2.84%
Seven Year Avg. (2001-2007)	2.92%
Six Year Avg. (2002-2007)	3.13%
Five Year Avg. (2003-2007)	1.82%
Four Year Avg. (2004-2007)	1.58%
Three Year Avg. (2005-2007)	1.50%
Two Year Avg. (2006-2007)	1.57%

Notes:

(1) Rates reflect year-end levels from the Lehman Brothers Utility Index - includes all publicly registered fixed rate deals greater than \$250 million, with an initial maturity greater than 18 months, and more than 12 months remaining until maturity

Low Spread

ARIZONA PUBLIC SERVICE COMPANY
Additional Interest Costs at Non-Investment Grade
(\$000)

YEAR	SECURITY	CREDIT	FACE VALUE	CURRENT RATE/FEE	BIG RATE/FEE	COST DIFFERENTIAL	ADDITIONAL ANNUAL INTEREST	CUMULATIVE ADDITIONAL INTEREST
2010	<u>Short-Term Debt:</u> CP/Revolver		400,000	0.500%	0.850%	1,400		
2010	<u>Unused Revolver:</u> Revolver \$400m		400,000	0.110%	0.175%	260		
2010	Revolver \$500m		73,290	0.100%	0.175%	55		
	Unused Revolver Subtotal		473,290			315		
2010	<u>Tax-Exempt No Enhancement:</u> Coc 1996A & 1999		26,710	3.530%	4.845%	351		
2010	<u>Auction Rate Tax-Exempt Insured:</u> Coc 2004A		12,850	0.325%	0.550%	29		
2010	Nav 2004A-E		166,150	0.325%	0.550%	374		
2010	Mar 2005A-E		163,975	0.265%	0.415%	246		
	Auction Rate Tax-Exempt Insured Subtotal		342,975			649		
2010	<u>Tax-Exempt w/ L/C:</u> Farm 1994A-C		146,650	0.600%	1.000%	587		
2010	Coc 1994A & 1998		49,520	0.700%	1.200%	248		
	Tax-Exempt w/ L/C Subtotal		196,170			834		
2010	<u>New(N)/Refinanced(R) L/I Debt:</u> Sr. Note (N)		250,000	0.000%	1.495%	3,738	7,287	7,287
2011	6.375% Sr. Note (R)		400,000	0.000%	1.495%	5,981	0	0
2011	Sr. Note (N)		550,000	0.000%	1.495%	8,224	21,493	28,781
2012	6.5% Sr. Note (R)		375,000	0.000%	1.495%	5,608	0	0
2012	Sr. Note (N)		50,000	0.000%	1.495%	748	27,848	56,629
2013	Mar 2002A (R)		90,000	0.450%	0.600%	135	0	0
2013	Sr. Note (N)		250,000	0.000%	1.495%	3,738	31,722	88,350
2014	5.8% Sr. Note (R)		300,000	0.000%	1.495%	4,486	0	0
2014	Sr. Note (N)		250,000	0.000%	1.495%	3,738	39,946	128,296
2015	4.65% Sr. Note (R)		300,000	0.000%	1.495%	4,486	0	0
2015	Sr. Note (N)		550,000	0.000%	1.495%	8,224	52,656	180,953
2016	6.25% Sr. Note (R)		250,000	0.000%	1.495%	3,738	0	0
2016	Sr. Note (N)		250,000	0.000%	1.495%	3,738	60,133	241,086
2017	Sr. Note (N)		250,000	0.000%	1.495%	3,738	63,871	304,957
2018	Sr. Note (N)		250,000	0.000%	1.495%	3,738	67,610	372,567
2019	Sr. Note (N)		250,000	0.000%	1.495%	3,738	71,348	443,914

High Spread

ARIZONA PUBLIC SERVICE COMPANY
Additional Interest Costs at Non-Investment Grade
(\$000)

YEAR	SECURITY	CREDIT	FACE VALUE	CURRENT RATE/FEE	BIG RATE/FEE	COST DIFFERENTIAL	ADDITIONAL ANNUAL INTEREST	CUMULATIVE ADDITIONAL INTEREST
2010	<u>Short-Term Debt:</u> CP/Revolver		400,000	0.500%	0.850%	1,400		
2010	<u>Unused Revolver:</u> Revolver \$400m		400,000	0.110%	0.175%	260		
2010	Revolver \$500m		73,290	0.100%	0.175%	55		
	<u>Unused Revolver Subtotal</u>					315		
2010	<u>Tax-Exempt No Enhancement:</u> Coc 1996A & 1999		26,710	3.530%	4.845%	351		
2010	<u>Auction Rate Tax-Exempt Insured:</u> Coc 2004A		12,850	0.325%	0.550%	29		
2010	Nav 2004A-E		166,150	0.325%	0.550%	374		
2010	Mar 2005A-E		163,975	0.265%	0.415%	246		
	<u>Auction Rate Tax-Exempt Insured Subtotal</u>		342,975			649		
2010	<u>Tax-Exempt w/ L/C:</u> Fairm 1994A-C		146,650	0.600%	1.000%	587		
2010	Coc 1994A & 1998		49,520	0.700%	1.200%	248		
	<u>Tax-Exempt w/ L/C Subtotal</u>		196,170			834		
2010	<u>New(N)/Refinanced(R) LT Debt:</u> Sr. Note (N)		250,000	0.000%	3.131%	7,827	11,376	11,376
2011	6.375% Sr. Note (R)		400,000	0.000%	3.131%	12,523	0	0
2011	Sr. Note (N)		550,000	0.000%	3.131%	17,219	41,117	52,493
2012	6.5% Sr. Note (R)		375,000	0.000%	3.131%	11,740	0	0
2012	Sr. Note (N)		50,000	0.000%	3.131%	1,565	54,422	106,915
2013	Mar 2002A (R)		90,000	0.450%	0.600%	135	0	0
2013	Sr. Note (N)		250,000	0.000%	3.131%	7,827	62,384	169,299
2014	5.8% Sr. Note (R)		300,000	0.000%	3.131%	9,392	0	0
2014	Sr. Note (N)		250,000	0.000%	3.131%	7,827	79,603	248,902
2015	4.65% Sr. Note (R)		300,000	0.000%	3.131%	9,392	0	0
2015	Sr. Note (N)		550,000	0.000%	3.131%	17,219	106,213	355,116
2016	6.25% Sr. Note (R)		250,000	0.000%	3.131%	7,827	0	0
2016	Sr. Note (N)		250,000	0.000%	3.131%	7,827	121,867	476,982
2017	Sr. Note (N)		250,000	0.000%	3.131%	7,827	129,693	606,676
2018	Sr. Note (N)		250,000	0.000%	3.131%	7,827	137,520	744,196
2019	Sr. Note (N)		250,000	0.000%	3.131%	7,827	145,347	889,543

**ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
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E-01345A-08-0172
JULY 31, 2008**

Staff Interim 2.71 (a) Please identify all current long-term debt APS has that was issued when APS had a bond rating of BBB-. (b) Please provide APS's best estimate of the cost of each debt issuance identified in response to part a, if APS had instead at the time of issuance had a bond rating of BBB. Include all Excel files and supporting calculations.

Response: (a) APS has issued \$400 million of long-term debt since S&P downgraded it to BBB- on December 21, 2005. This debt was issued on 8/3/2006 in two tranches, \$250 million maturing on 8/1/2016 with a coupon of 6.25% and \$150 million maturing on 8/1/2036 with a coupon of 6.875%.

(b) If APS had had a bond rating of BBB at the time the amount referred to in subpart (a) was issued the coupon on these two tranches would have been approximately 6.20% and 6.825% respectively. This would have resulted in interest expense savings of \$1.25 million and \$2.25 million over the life of the bonds.

Witness: Donald Brandt

ARIZONA CORPORATION COMMISSION
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E-01345A-08-0172 – INTERIM RATES
JULY 31, 2008

Staff Interim 2.27 Refer to paragraphs 33 and 35, of Mr. Brandt's 6/6/08 affidavit. (a) Given the current rate case schedule, when does APS anticipate that base rates being addressed in the current base rate case would become effective? If beyond October 1, 2009, please explain your answer fully. (b) Have any credit rating agencies announced that APS's debt would be downgraded if APS's request for interim rates were to be denied? If so, please provide all such announcements. (c) Have any credit rating agencies announced that APS's debt would be downgraded if APS's request for interim rates were to be granted in an amount substantially lower than the \$115 million requested by APS? If so, please provide all such announcements. (d) Has APS had any communications with any credit rating agencies wherein APS's request for interim rates was discussed? If not, explain fully why not. If so, please identify the dates, persons involved, and substance of all such communications. (e) Has APS advised any of the credit rating agencies that the approximately 4 mill PSE Adjustor was going to expire after APS collected the \$46 million of fuel and purchased power cost? If not, explain fully why not. If so, please identify the dates, persons involved, and substance of all such communications. (f) Please identify when the PSE Adjustor expired, and/or when APS currently expects it to expire.

Response:

- (a) APS is still hoping to have rates effective by October 1, 2009.
- (b) No.
- (c) No.
- (d) Yes. We notify them of regulatory filings. We have no records of specific dates. Persons involved in such discussions could be Don Brandt, James Hatfield, Barbara Gomez, and James McGill.
- (e) Yes. See response to (d)
- (f) The PSA expired with the last billing cycle of July, 2008.

Witness: Donald Brandt

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E-01345A-08-0172
JULY 31, 2008

Staff Interim 2.76 Does APS believe that, without interim rates, it would be facing a cash flow emergency in 2008 or 2009? If so, please provide all quantitative information and other documentation relied upon by APS for its expectation of a cash flow emergency without interim rates. If not, explain fully why not.

Response: No. The Company has \$900 million in committed credit facilities available to it through 11/2010.

Witness: Donald Brandt

ARIZONA CORPORATION COMMISSION
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E-01345A-08-0172 – INTERIM RATES
JULY 31, 2008

Staff Interim 2.24 Refer to page 13, paragraph 29, of Mr. Brandt's 6/6/08 affidavit. (a) Please identify and describe in detail the two instances in which the Company's ability to access the debt markets have been limited in 2007. (b) Have there been any instances in 2008 in which the Company's ability to access the debt markets have been limited? If so, please identify, quantify and explain fully each such instance.

Response: (a) In August and December 2007. Our ability to issue commercial paper was eliminated due to the volatility in the credit markets resulting from the sub-prime mortgage crisis.

(b) Yes. Again, our ability to issue commercial paper has been periodically impacted throughout 2008.

In each instance, APS borrowed under their revolving credit facilities which currently have similar pricing to commercial paper.

Witness: Donald Brandt

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E-01345A-08-0172 – INTERIM RATES
JULY 31, 2008

Staff Interim 2.19 Refer to page 12, paragraph 26, of Mr. Brandt's 6/6/08 affidavit. (a) When will the \$400 million of equity be infused into APS? (b) Does the timing of the equity infusion have any impact on APS's FFO/Debt ratio? If not, explain fully why not. If so, please identify, quantify and explain the impacts.

Response: (a) We expect PNW to issue up to \$400 million of equity before year-end 2009 and immediately infuse the proceeds into APS.

(b) Yes. The debt level will increase if there is no equity infusion which will decrease FFO/Debt by approximately 2%. Attached as APS13333 is an approximation of the FFO/Debt impact.

Witness: Donald Brandt

**Funds from Operations to Debt
Present Rates - No Equity Infusion
(\$ Millions)**

APS	12/31/2008			12/31/2009		
	With \$400m Equity Infusion	Impacts of Removing Equity Infusion	Without \$400m Equity Infusion	With \$400m Equity Infusion	Impacts of Removing Equity Infusion	Without \$400m Equity Infusion
FFO	\$ 908	\$ (7)	\$ 901	\$ 781	\$ (15)	\$ 766
Adjusted debt	\$ 3,942	\$ 400	\$ 4,342	\$ 4,445	\$ 400	\$ 4,845
FFO to debt	23.0%		20.8%	17.6%		15.8%

(400m more debt x 6.25% = 25m higher interest x 60% = \$15 after tax x 6/12 = \$7m lower ffo for 2008)

APPENDIX A
LIST OF EMERGENCY RATE APPLICATIONS SINCE 1983

Company	Decision No.	Year Decided	Issue
Arizona Public Service Company	53909	1983	Negative indicators (cash coverage of interest, cash coverage of common earnings, and internal cash generation) led to risk of APS' commercial paper rating being downgraded leading to borrowing with higher interest rates and leading to a possible downgrade to "BB" status. APS undergoing a massive construction program, including the three nuclear generating units at Palo Verde. A \$60 million increase was approved but APS was ordered to cease accruals of AFUDC on \$327 million of construction associated with Palo Verde Unit 1 during the effective period of the interim rates. APPROVED
E & R Water Company, United Utilities Inc., Desert Utilities Inc., Williamson Waterworks Inc., Pinewood Sewer Company Inc., High Country Water Inc., C & S Water Company Inc., and Pine Oak Water Company Inc.	57768	1991	All of these utilities were owned by Utility Systems Group Inc. ("USG") through stock holdings acquired in 1988 and 1989. USG also owned Utility Management and Operations Services ("UMOS"), which appeared to be an unregulated subsidiary. All of the utilities were in poor condition, such as sewer pipes being used to deliver water. In addition, financial impacts from UMOS hurt the utilities' financial health. Applicant admitted to paying more for the utilities than what they were worth and Staff and RUCO indicated that the Applicant likely caused whatever financial emergency existed. The Commission rejected USG's arguments that there was a sudden and unforeseen emergency or its contention of a negative cash flow from operations. This Decision references Decision No. 57049 (1990), where the Commission denied emergency rate relief for Pinewood Sewer Company. DENIED
Mountain View Water Company	57841	1992	Water quality problems and major operation and maintenance deficiencies along with a cease and desist order issued from the Arizona Department of Environmental Quality ("ADEQ"). The utility has been operating at a loss for the last 16 years, and was being subsidized for its operations. The utility also experienced water shortages over the summer the past six to seven years. Commission found an emergency existed. APPROVED.
Golden Corridor Water Company	58672	1994	A lightning surge destroyed a motor servicing the primary well. Immediate repairs were required. \$3,075.11 was going to be needed to make the repairs. The utility's back-up well was inoperable. The utility was able to pay for the repairs in full and some evidence suggested a water leak had caused an electrical short in the motor. No emergency was found because the well was operational and charges for the repairs were paid-in-full. The investment in the new well was to be addressed in the utility's next permanent rate case. DENIED.

APPENDIX A

LIST OF EMERGENCY RATE APPLICATIONS APPROVED SINCE 1983 (continued)

Company	Decision No.	Year Decided	Issue
United Utilities - Mesa Del Caballo System	58677	1994	Severe water shortage problems in the area. Water needed to be purchase from the Town of Payson. The issues in this case appeared to be more about the design and duration of the emergency surcharge, rather than whether an emergency existed. A three-year surcharge was approved from May to October of each year for those using over 4,000 gallons. APPROVED.
Congress Water Company	58777	1994	A non-profit utility had a back-up well pumping at 28 percent of capacity. \$23,321.40 needed to make the necessary repairs to the well. Repairs were also needed to a booster pump and telemetry control box, apparently due to a lightning strike. The utility did not have the cash reserves nor did it have access to other funds to pay for the improvements to the well, booster pump and control box without additional funding. An emergency found, based on the fact that because of the lack of sufficient cash reserves and the need to ensure uninterrupted service. APPROVED.
Lakewood Water Company	58900	1994	Emergency petition for a surcharge to recover the increased costs for laboratory analyses required by ADEQ. The applicant subsequently withdrew its application. DISMISSED WITHOUT PREJUDICE.
Valle Verde Water Company	58917	1994	Emergency surcharge requested to offset chemical analysis costs required by ADEQ. The utility subsequently withdrew its application. DISMISSED WITHOUT PREJUDICE.
Sedona Venture (Sewer)	59122	1995	Storm damage to the utility's water and sewer lines, near a bridge that was washed out. No emergency determined because the Company was not insolvent and that service should be maintained in the foreseeable future. The Company would have \$14,320 cash flow to make payments on a \$36,000 loan for repairs. DENIED.
Mountain View Water Company	59250	1995	The utility applied for an emergency increase to pay for the hauling of drinking and cooking water. The utility had then-existing compliance issues with both the Commission and ADEQ, including ADEQ ordering the utility to haul drinking and cooking water on a weekly basis. The utility advocated for interim rates to fund a particular method of hauling. The Commission denied granting of relief for hauling because the utility knew of problems since 1984. Numerous other compliance issues. The Commission did approve a surcharge for the limited purpose of payment for a well pump and motor. APPROVED IN PART AND DENIED IN PART.

APPENDIX A

LIST OF EMERGENCY RATE APPLICATIONS APPROVED SINCE 1983 (continued)

Company	Decision No.	Year Decided	Issue
George M. Papa dba George M. Papa Water Company	59650	1996	An abundance of operational and management problems, numerous outstanding amounts owed to local taxing authorities, lack of storage facilities, and other deficiencies. APPROVED
Bellemont Water Company	60083	1997	Water production on the utility's wells fell to 250 gpm from 420 gpm, forcing the utility to purchase water from Atchison, Topeka and Santa Fe Railway Company to meet its needs. The Utility had to pay an extra \$1.50 per 1,000 gallons pumped, plus electricity and maintenance for the Railway's well. Staff proposed a different method of recovering emergency rates, which was adopted by the Commission. APPROVED.
Diamond Valley Water Users Corporation	60394	1997	Poor physical condition and rapid deterioration of the utility's distribution system, due to the entire system being constructed in substandard fashion. Also, Yavapai County was re-grading roadways where the utility's mains were located. As a result, the utility was being requested to lower the depth of its mains in these roadways. But because the utility had a positive cash flow of \$2,300 each month to make improvements, and because the utility was not insolvent and could maintain service, Staff recommended denial. Staff's position was adopted by the Commission. DENIED.
Holiday Hills Water Company	60572	1998	The utility had a history of repeated water outages and shortages. One of the two wells repeatedly ran dry. Water hauling was necessary, with water purchased from the City of Prescott. Water main line replacements also needed, and damaged meters. The City of Prescott was threatening to deny the utility any more water unless payments for outstanding amounts owed were made. Outstanding amounts owed to other entities making repairs to the system. APPROVED.
Far West Water Company	61833	1999	Utility's groundwater supplies contained a high level of total dissolved solids that affected the taste and affected appliances that used the water. To allow enough cash flow to finance construction of a water treatment plant and related facilities so that Colorado River water can be used. APPROVED

APPENDIX A

LIST OF EMERGENCY RATE APPLICATIONS APPROVED SINCE 1983 (continued)

Company	Decision No.	Year Decided	Issue
Vail Water Company	61930	1999	Operating shortfalls forced the utility to borrow \$150,000 from its shareholders. The utility was alleging it would need to borrow an additional \$93,000 if interim rates are not approved. The utility further alleged it would not be able to perform its services as a public service corporation and that it was insolvent. The Commission found that the utility had not met its burden to show an emergency existed, mainly because the utility continued to incur expenses for disallowed items. DENIED
Thim Utility Company, E&T Division	62651	2000	High nitrate levels from the utility's one well forced purchase of twice as much water from the City of Tucson than what was anticipated. APPROVED
Oatman Water Company	62953	2000	Decline in the aquifer lead to the utility's well pumping only 3 gallons per minute at time of the hearing. Financing needed to haul water and drill two additional wells. A previous interim rate order was approved (Decision No. 62772) but additional relief still needed. APPROVED
Forty Niner Water Company	65352	2002	Persistent drought conditions and lack of conservation lead to the utility having to purchase water from the City of Tucson. Emergency rates needed to cover the costs of the purchases and the hook-up with the City of Tucson. APPROVED
Pine Water Company	65914	2003	Chronic water supply problems in the area the utility serves. Ongoing drought conditions and continuing low rainfall exacerbating the utility's ability to supply water to its customers. Water hauling necessary until a construction of a water pipeline from a neighboring utility to supply water was completed, along with the fixing of leaks and drilling of new wells. APPROVED
Mount Tipton Water Company	66732	2003	The utility was unable to pay its WIFA loan when payments were due. The utility had pursued formation of an improvement district, but formation was not approved. The interest rate on the WIFA loan remained at 8.5 percent versus the 4.75 percent reduction that would have occurred had a district been formed. The utility also had recently acquired another utility (Dolan Springs) that owed considerable back taxes. APPROVED

APPENDIX A

LIST OF EMERGENCY RATE APPLICATIONS APPROVED SINCE 1983 (concluded)

Company	Decision No.	Year Decided	Issue
Naco Water Company	67984	2005	Increases in construction costs for upgrades to the utility's system. Additional costs to relocate a portion of its system to accommodate a road-widening project. Additional water storage and a new well needed to address the fact that the utility's Well No. 4 was going dry. The utility received emergency interim rate relief in Decision No. 61609 (1999) due to ongoing operational and financial problems. APPROVED
Sabrosa Water Company	67990	2005	Problems included inadequate water supplies, marginal to poor water quality, poorly maintained equipment, a series of financial and legal problems as a result of the owner abandoning the system and rates that do not allow for the operation and maintenance of the water system. APPROVED
Johnny A. McLain dba Cochise, Horseshoe Ranch, Coronado Estates, Crystal, Mustang, Miracle Valley and Sierra Sunset	N/A	N/A	Recommended Opinion and Order in Docket Nos. W-01646A-06-0010 outlines numerous operational and maintenance problems, outages, and other deficiencies. All systems part of a bankruptcy proceeding. TO BE DECIDED



Moody's Investors Service

Global Credit Research
Credit Opinion
28 JUL 2008

Credit Opinion: Arizona Public Service Company

Arizona Public Service Company

Phoenix, Arizona, United States

Ratings

Category	Moody's Rating
Outlook	Stable
Issuer Rating	Baa2
Sr Unsec Bank Credit Facility	Baa2
Senior Unsecured	Baa2
Subordinate Shelf	(P)Baa3
Commercial Paper	P-2
Parent: Pinnacle West Capital Corporation	
Outlook	Stable
Issuer Rating	Baa3
Sr Unsec Bank Credit Facility	Baa3
Senior Unsecured Shelf	(P)Baa3
Subordinate Shelf	(P)Ba1
Preferred Shelf	(P)Ba2
Commercial Paper	P-3

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Key Indicators

Arizona Public Service Company

ACTUALS	1Q08 LTM	2007	2006	2005
(CFO Pre-W/C + Interest) / Interest Expense [1][2]	4.4x	4.2x	4.4x	3.6x
(CFO Pre-W/C) / Debt [2]	19.6%	18.3%	19.0%	14.5%
(CFO Pre-W/C - Dividends) / Debt [2]	14.1%	14.0%	14.5%	9.7%
(CFO Pre-W/C - Dividends) / Capex [2]	56.0%	58.7%	79.0%	53.1%
Debt / Book Capitalization	45.9%	45.9%	46.0%	47.5%
EBITA Margin	21.7%	22.6%	23.9%	20.9%

[1] CFO pre-W/C, which is also referred to as FFO in the Global Regulated Electric Utilities Rating Methodology, is equal to net cash flow from operations less net changes in working capital items [2] Changes in risk management and trading assets and liabilities are excluded from CFO Pre-W/C

Note: For definitions of Moody's most common ratio terms please see the accompanying User's Guide.

Opinion

Corporate Profile

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Arizona Public Service (APS: Baa2 senior unsecured, stable) is a vertically integrated electric utility that provides electric service to most of the state of Arizona with the major exceptions of about one-half of the Phoenix metropolitan area and the Tucson metropolitan area. APS is the primary subsidiary of Pinnacle West Capital Corporation (Pinnacle: Baa3 senior unsecured, stable), a holding company that through its other subsidiaries sells energy related products and services and develops residential and commercial real estate.

Recent Events

On July 25, 2008 Moody's revised the outlooks for APS and Pinnacle to stable from negative. The revision in outlook was a result of the companies' stable financial performance and also reflects our opinion of APS' improved prospects for more timely recovery of certain costs than had historically been the case. Our view is based on recent regulatory decisions involving recovery mechanisms for the cost of fuel and purchased power and transmission as well as recovery mechanisms for certain growth related costs. The outlook revision also recognized APS' demonstrated intent to attempt to minimize regulatory lag by filing for additional rate relief as soon as practicable.

Regulatory Activity

Approval of Line Extension Fees

In February 2008 the Arizona Corporation Commission (ACC) approved an amendment to APS' line extension schedule which eliminated certain free footage allowances and permitted APS to collect, on a current basis, costs relating to line extensions, which are estimated to be approximately \$3,500 - \$5,000 per new meter set (pre-tax). Moody's views the incremental (after-tax) cash flow resulting from these fees as recurring, and we have adjusted our credit metrics to reflect them as operating cash flows.

General Rate Case Filing

In June 2008, APS filed for a \$278.2 million net rate increase (approximately 8.5% from existing customers) comprised of a \$264.3 million non-fuel related increase and a \$13.9 million net fuel-related increase. APS has proposed to collect up to \$53 million of the increase specifically from new customers. The fuel increase request is net of approximately \$170 million currently being collected in APS rates through its power supply adjutor (PSA) mechanism. APS' June filing is based on a test year ended December 2007. The request has been accepted by ACC Staff. A procedural schedule has been proposed with hearings in April 2009 and a decision expected in the latter part of 2009.

Request for Interim Increase

Also in June 2008, APS filed a request for an interim base rate increase of \$.003987 per kWh to become effective upon the expiration of the \$.003987 per kWh power supply adjutor surcharge currently in APS' rates. APS estimates the current surcharge will remain in effect through July. A procedural schedule has been set for this request, with hearings scheduled for September 2008 with a decision anticipated shortly thereafter.

Palo Verde

In February 2007, Nuclear Regulatory Commission (NRC) placed Palo Verde Unit 3 (PVU3), into the "multiple/repetitive degraded cornerstone" column of the NRC's action matrix, which has resulted in an enhanced inspection regimen and some increased operating costs for APS as it seeks to improve its processes at all three Palo Verde units. In February 2008, the NRC issued its revised confirmatory action letter, and as required, on March 31, 2008, APS submitted its revised improvement plan. The NRC will continue to provide increased oversight at Palo Verde until the facility has demonstrated sustained performance improvement. APS anticipates that this process will continue into 2009.

While operating performance at Palo Verde has improved, capacity factors continue to be impacted by planned outages (including a steam generator replacement in 2007) that have been extended by additional inspections. In 2007, the plant's average capacity factor was 79.0% versus 70.7% in 2006 and 77.4% in 2005. For the first quarter of 2008, the nuclear capacity factor was 93%.

Rating Rationale

The Baa2 rating for the senior unsecured obligations of APS reflects the stability of its regulated cash flows, the economic strength of its service territory, its regulatory environment, cash flow credit metrics that are appropriate ... APS13051
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for the rating, and its position as a subsidiary of Pinnacle. The rating and outlook consider the traditionally challenging regulatory environment in Arizona, but also contemplates recent ACC decisions and regulatory activities that appear intended to reduce regulatory lag and provide more timely recovery of certain costs.

Given APS' current significant capital expenditure program, the company will require continued, timely regulatory support to maintain credit metrics that are appropriate for its rating. The stable outlook assumes APS will be reasonably successful in managing its regulatory relationships with an objective of achieving more timely recovery and an opportunity to earn a fair return. The rating also incorporates an expectation that APS will maintain a balanced approach with regards to financing its capital expenditures with a goal of maintaining or improving its current level of financial strength.

The most important drivers of the rating and outlook are as follows:

Regulatory Environment

Almost all of APS' operations are regulated which is generally viewed as positive for credit quality as regulated cash flows tend to be more stable and predictable than those of unregulated companies. This key factor is tempered somewhat by the historically challenging regulatory environment in Arizona, which Moody's ranks as below average for U.S. regulatory jurisdictions in terms of supportiveness or predictability and stability of regulated cash flows.

APS' operations are regulated by the ACC, an elected commission that has tended to render its decisions after prolonged consideration. Although regulatory lag remains a significant concern, recent decisions with regards to costs for fuel and purchased power and transmission, and certain growth related expenditures should reduce the time to recover some of these items.

General Regulatory Lag

APS' rate case activity is illustrative of an environment where there has tended to be below average assurance of timely recovery of costs and the ability to earn a reasonable return on investment. APS' 2003 rate case was not concluded until April 2005, and the increase received was less than half of the amount requested; the significant delay and relatively modest allowed increase resulted in the need for APS to quickly file another rate case in January 2006.

APS' January 2006 rate case was decided somewhat more quickly with a decision rendered in June 2007 wherein the utility received approximately three quarters of its requested increase; however, the allowed increase was almost entirely related to increased costs for fuel and purchased power. Of the \$120 million requested for non-fuel items, only \$7 million was approved. As a result, APS filed another general rate case as soon as practicable, based on a test year-ending September 2007. APS subsequently agreed with ACC Staff to re-file its rate increase request based on a test year-ending December 2007. Given the amount of time generally required to decide rate cases in Arizona, Moody's estimates that new rates will not be implemented until the latter part of 2009.

Reduced Regulatory Lag for Certain Items

The ACC's June 2007 decision included a significantly improved mechanism for the recovery of fuel and purchased power costs, incorporating a forward estimate of fuel costs in addition to the continued recovery of past deferrals. Fuel and purchased power costs have been among APS' most volatile operating expenses and Moody's views the ACC's recent approach to this problem as supportive of the utility's credit profile. However, we note that APS fuel recovery factor remains subject to an annual cap, potentially delaying recoveries beyond a one-year true-up period, and subject to a 90/10 sharing mechanism wherein 10% of costs are not able to be recovered.

In June 2008, APS requested an interim base rate increase that would take effect upon expiration in July 2008 of a surcharge being collected under the fuel clause adjustment mechanism. The request could potentially allow base rate cost recovery, subject to refund, prior to the completion of the next general rate case. This could result in a measure of rate stability as there could potentially be no immediate incremental increase to customers, and there would likely ultimately be a smaller base rate increase. Since the ACC and interested parties needed more time to consider this request, a decision is now expected late September to mid October. If implemented new rates could be in place November 1 when lower winter rates go into effect, thereby allowing some degree of rate stability. Moody's notes that the ACC has granted interim increases in the recent past. Moody's views mechanisms designed to reduce the time required to recover a utility's costs, such as the requested interim base rate increase a positive for credit quality.

In its June 2007 order, the ACC requested that APS propose mechanisms that could potentially allow growth to

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pay for itself, rather than being paid by the current customer base. In February 2008, the ACC approved an amendment to APS' line extension schedule that should provide an almost immediate recovery of the cost of certain growth related capital investment reducing the amount of external financing needed to support these expenditures. Moody's views this revision as positive for credit, virtually eliminating the normal regulatory lag that would otherwise be associated with seeking recovery of these expenditures.

In its 2005 order, the ACC authorized a transmission tracking adjustment (TCA) mechanism designed to allow retail transmission charges to track those authorized by the FERC. The TCA was initially implemented in March 2008, and timely adjusted following an automatic adjustment in FERC transmission rates in June 2008.

Service Territory Growth Slowing

Growth in APS' service territory has slowed significantly below the 4-5% level experienced in 2005 and 2006. In 2007, customer growth was approximately 3%; for the first quarter of 2008 customer growth slowed to 2% and is not expected to return to historical heights over the near-to-medium term. Although, a growing customer base can provide a source of increased revenue, assuming timely recovery of increased growth related investment and increased costs for fuel and purchased power, it also has resulted in a continuing need for capital investment and regulatory relief. The stable outlook assumes APS will continue to take a balanced approach with regards to the funding of its capital expenditures. Moody's also believes a sustained period of slower growth could potentially temper APS need for capital investment which could reduce its financing requirements.

Financial Metrics

In 2004 and 2005, APS' key financial metrics reflected the fact that it had been unable to recover fully increased costs for fuel, purchased power and capital spending on a timely basis. For example, the ratio of cash from operations prior to changes in current assets and liabilities (CFO pre-WC) / debt (incorporating Moody's standard analytic adjustments) dropped into the mid-teens. Financial metrics improved in 2006 and 2007 with CFO pre - WC / debt moving to the upper-teens as fuel recovery improved. These metrics are now toward the middle-to-upper end of the 13% to 25% range identified in Moody's Rating Methodology for Global Electric Utilities for Baa rated entities on a stand-alone basis within the medium risk category. Cash flow credit metrics are expected to remain in that range over the near-to-medium term reflecting more timely cost recovery of certain items and assuming capital expenditures are financed in a manner that is also supportive of APS current financial strength and flexibility. In general, Moody's would look for APS to have financial metrics that are somewhat stronger than comparably rated utility operating companies that operate in regulatory environments that have historically been more supportive of credit quality.

Subsidiary of Pinnacle West

Pinnacle, APS' parent company, conducts a modest amount of non-regulated activities including power marketing and trading, sales of energy related products and services, and residential and commercial real estate development through subsidiaries including SunCor Development Company (real estate). However, for the past several years almost all of Pinnacle's cash from operations has been generated by APS. Over the near-to-medium term, Pinnacle's non-regulated businesses, are not expected to meaningfully contribute to, or detract from, consolidated cash flows. Although residential real estate sales slowed considerably in 2006, 2007 and continuing into 2008, Pinnacle's joint venture strategy with other developers, combined with its successfully completed asset sales program (implemented 2003-2005) has significantly reduced its exposure to this volatile sector. The parent company also maintains a modest amount of leverage with holding company debt at less than 10% of consolidated debt.

Liquidity Profile

APS' Prime-2 short-term rating for commercial paper reflects the relatively stable and predictable cash flow provided by its regulated electric utility operations.

For the year ended December 2007, APS' cash flow from operations of approximately \$765 million covered approximately 72% of its outlays, including capital expenditures of approximately \$900 million and dividends to Pinnacle of \$170 million. The shortfall was funded via a combination of internal and external sources of cash including \$218 million of short term debt proceeds, approximately \$40 million of equity contributions from Pinnacle and cash on hand.

For the next several years, APS' capital expenditures are expected to be in the range of \$1.0 billion per year, primarily to expand APS' transmission and distribution network to meet growing customer needs, but also to upgrade its existing utility properties and for other environmental purposes. Funding for these increased capital

expenditures is expected to be provided via a combination of internal and external sources of cash, including operating cash flow, equity contributions from Pinnacle and long and short term debt financing.

Over the last several years, APS has paid dividends to Pinnacle of \$170 million per year. Moody's expects APS' dividends are likely to remain near this level in 2008 and over the medium term.

APS' pattern of cash flow is seasonal as the peak of electric demand occurs during the summer months due to high air conditioning load that exists in its service territory. As a result, the bulk of its commercial paper borrowings typically occur in the second and third quarters of each year. As of March 31, 2008, APS had \$90 million of commercial paper and \$100 of short-term debt outstanding under its revolving credit facility.

APS has historically maintained a very modest level of cash on its balance sheet; as of March 31, 2008, APS had reported cash and cash equivalents of approximately \$8 million.

APS' commercial paper program is sized at \$250 million and is currently supported by two committed lines of credit totaling \$900 million, a \$400 million line that expires in December 2010 and a \$500 million line that expires in September 2011. As of March 31, 2008, APS had approximately \$100 million of borrowings under its credit facilities. Overall availability under these credit facilities was \$796 million, of which \$90 million was back-stopping commercial paper outstanding. Both credit agreements have one financial covenant that requires the ratio of debt to total capitalization not to exceed 65%. As of March 31, 2008, APS' debt to total capitalization ratio, calculated in accordance with the credit documents, was approximately 47%. The credit agreements do not require a Material Adverse Change (MAC) representation for revolver borrowings. No rating triggers exist in any APS credit facilities though interest costs may increase under various financing agreements if a downgrade occurs. APS nearest long term debt maturity is \$400 million of unsecured notes due in 2011. In 2010, APS must replace letters of credit supporting approximately \$200 million of variable rate pollution control bonds.

APS' Prime-2 rating for its short term obligations assumes that the company will manage the amount of commercial paper and other near term obligations outstanding within the limits of its readily available sources of cash, including its committed bank credit facilities.

Rating Outlook

The stable outlook reflects the nature of APS' predominately regulated cash flows and Moody's view that its improved cash flow financial metrics are likely to be sustainable. The outlook assumes APS' will be reasonably successful in managing its regulatory relationships and that capital expenditures will be financed in a balanced manner with a goal of maintaining or improving APS current position of financial strength.

What Could Change the Rating - Up

APS' rating is not likely to be revised upward in the near-to-medium term. Longer term, if there is an increase in supportive regulatory treatment resulting in material, timely rate increases, or if there are material reductions in costs or leverage such that Moody's could anticipate key financial ratios improving significantly from their current levels, if for example, a ratio of CFO pre -WC / debt could be maintained in the mid twenty percent range.

What Could Change the Rating - Down

A downgrade could result if Palo Verde experiences an extended outage and APS is unable to recover, in a timely manner, higher maintenance and purchased power costs, or if APS' regulatory lag for capital spending becomes more pronounced. A downgrade could result if Moody's expects a sustained weakening of financial metrics, if for example, the ratio of CFO pre -WC / debt would remain in the mid-teens for an extended period.

Rating Factors

Arizona Public Service Company

62000

Select Key Ratios for Global Regulated Electric

Utilities

Rating	Aa	Aa	A	A	Baa	Baa	Ba	Ba
Level of Business Risk	Medium	Low	Medium	Low	Medium	Low	Medium	Low

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CFO pre-W/C to Interest (x) [1]	>6	>5	3.5-6.0	3.0-5.7	2.7-5.0	2-4.0	<2.5	<2
CFO pre-W/C to Debt (%) [1]	>30	>22	22-30	12-22	13-25	5-13	<13	<5
CFO pre-W/C - Dividends to Debt (%) [1]	>25	>20	13-25	9-20	8-20	3-10	<10	<3
Total Debt to Book Capitalization (%)	<40	<50	40-60	50-70	50-70	60-75	>60	>70

[1] CFO pre-W/C, which is also referred to as FFO in the Global Regulated Electric Utilities Rating Methodology, is equal to net cash flow from operations less net changes in working capital items

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ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172-INTERIM RATES
JULY 31, 2008

Staff Interim 2.97 Without any interim rate increase, will APS be able to provide safe and reliable electric service to its customers in 2008 and 2009? If not, explain fully why not.

Response: While the Company hopes that it is able to continue to provide safe and reliable electric service to customers in 2008 and 2009 and intends to do so, the Company's interim base rate request is intended to support its overall financial health so that its ability to offer reliable electric service will not be jeopardized in the future.

Witness: Donald Brandt

ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172
JULY 31, 2008

Staff Interim 2.74 Does APS have any estimates of the cost of obtaining a performance bond or other form of financial assurance that APS would be able to make refunds of any emergency rate relief that might be granted by the Commission? If so, please provide details for each type of performance bond or other form of financial assurance that APS has knowledge of.

Response: The estimated cost for either a bond or a letter of credit would be in the range of 1% of its face value.

Witness: Donald Brandt

ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172
JULY 31, 2008

Staff Interim 2.73 If APS is granted any interim rate relief, please list all steps and measures that APS would take in order to assure that it would be able to subsequently make refunds that might be ordered by the Commission at a later date.

Response: Although APS does not believe that it is legally obligated or necessary to post a bond, APS would nonetheless be willing to provide a bond or a letter of credit guaranteeing the refunds, if ordered to do so by the Commission.

Witness: TBD



Moody's Investors Service

Global Credit Research
Credit Opinion
28 JUL 2008

Credit Opinion: Pinnacle West Capital Corporation

Pinnacle West Capital Corporation

United States

Ratings

Category	Moody's Rating
Outlook	Stable
Issuer Rating	Baa3
Sr Unsec Bank Credit Facility	Baa3
Senior Unsecured Shelf	(P)Baa3
Subordinate Shelf	(P)Ba1
Preferred Shelf	(P)Ba2
Commercial Paper	P-3
Arizona Public Service Company	
Outlook	Stable
Issuer Rating	Baa2
Sr Unsec Bank Credit Facility	Baa2
Senior Unsecured	Baa2
Subordinate Shelf	(P)Baa3
Commercial Paper	P-2

Contacts

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Key Indicators

Pinnacle West Capital Corporation

ACTUALS	1Q08 LTM	2007	2006	2005
(CFO Pre-W/C + Interest) / Interest Expense [1][2]	4.0x	3.9x	4.2x	3.7x
(CFO Pre-W/C) / Debt [2]	17.5%	17.2%	18.9%	16.4%
(CFO Pre-W/C - Dividends) / Debt [2]	12.8%	12.5%	14.1%	11.8%
(CFO Pre-W/C - Dividends) / Capex [2]	57.3%	57.6%	75.2%	69.6%
Debt / Book Capitalization	48.9%	48.5%	47.4%	48.0%
EBITA Margin	19.2%	20.2%	21.6%	18.9%

[1] CFO pre-W/C, which is also referred to as FFO in the Global Regulated Electric Utilities Rating Methodology, is equal to net cash flow from operations less net changes in working capital items [2] Changes in risk management and trading assets and liabilities are excluded from CFO Pre-W/C

Note: For definitions of Moody's most common ratio terms please see the accompanying User's Guide.

Opinion

Corporate Profile

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Pinnacle West Capital Corporation (Pinnacle: Baa3 senior unsecured, stable) is a holding company whose principal subsidiary, Arizona Public Service Corporation (APS: Baa2 senior unsecured, stable), is a vertically integrated electric utility that provides electric service to most of the state of Arizona with the major exceptions of about one-half of the Phoenix metropolitan area and the Tucson metropolitan area. Pinnacle's other subsidiaries are engaged in the sale of energy related products and services and the development of residential and commercial real estate.

Recent Events

On July 25, 2008 Moody's revised the outlooks for APS and Pinnacle to stable from negative. The revision in outlook was a result of the companies' stable financial performance and also reflects our opinion of APS' improved prospects for more timely recovery of certain costs than had historically been the case. Our view is based on recent regulatory decisions involving recovery mechanisms for the cost of fuel and purchased power and transmission as well as recovery mechanisms for certain growth related costs. The outlook revision also recognized APS' demonstrated intent to attempt to minimize regulatory lag by filing for additional rate relief as soon as practicable.

Regulatory Activity

Approval of Line Extension Fees

In February 2008 the Arizona Corporation Commission (ACC) approved an amendment to APS' line extension schedule which eliminated certain free footage allowances and permitted APS to collect, on a current basis, costs relating to line extensions, which are estimated to be approximately \$3,500 - \$5,000 per new meter set (pre-tax). Moody's views the incremental (after-tax) cash flow resulting from these fees as recurring, and we have adjusted our credit metrics to reflect them as operating cash flows.

General Rate Case Filing

In June 2008, APS filed for a \$278.2 million net rate increase (approximately 8.5% from existing customers) comprised of a \$264.3 million non-fuel related increase and a \$13.9 million net fuel-related increase. APS has proposed to collect up to \$53 million of the increase specifically from new customers. The fuel increase request is net of approximately \$170 million currently being collected in APS rates through its power supply adjustor (PSA) mechanism. APS' June filing is based on a test year ended December 2007. The request has been accepted by ACC Staff. A procedural schedule has been proposed with hearings in April 2009 and a decision expected in the latter part of 2009.

Request for Interim Increase

Also in June 2008, APS filed a request for an interim base rate increase of \$.003987 per kWh to become effective upon the expiration of the \$.003987 per kWh power supply adjustor surcharge currently in APS' rates. APS estimates the current surcharge will remain in effect through July. A procedural schedule has been set for this request, with hearings scheduled for September 2008 and a decision anticipated shortly thereafter.

Palo Verde

In February 2007, Nuclear Regulatory Commission (NRC) placed Palo Verde Unit 3 (PVU3), into the "multiple/repetitive degraded cornerstone" column of the NRC's action matrix, which has resulted in an enhanced inspection regimen and some increased operating costs for APS as it seeks to improve its processes at all three Palo Verde units. In February 2008, the NRC issued its revised confirmatory action letter, and as required, on March 31, 2008, APS submitted its revised improvement plan. The NRC will continue to provide increased oversight at Palo Verde until the facility has demonstrated sustained performance improvement. APS anticipates that this process will continue into 2009.

While operating performance at Palo Verde has improved, capacity factors continue to be impacted by planned outages (including a steam generator replacement in 2007) that have been extended by additional inspections. In 2007, the plant's average capacity factor was 79.0% versus 70.7% in 2006 and 77.4% in 2005. For the first quarter of 2008, the nuclear capacity factor was 93%.

Rating Rationale

The Baa3 rating for the senior unsecured obligations of Pinnacle reflects the stability of its regulated cash flows,

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the economic health of APS' service territory, its regulatory environment, cash flow credit metrics that are appropriate for the rating, and its modest exposure to a currently weak real estate market. The rating and outlook consider the traditionally challenging regulatory environment in Arizona, but also contemplates recent ACC decisions and regulatory activities that appear intended to reduce regulatory lag and provide more timely recovery of certain costs.

Given APS' current significant capital expenditure program, the company will require continued, timely regulatory support to maintain credit metrics that are appropriate for its rating. The stable outlooks for APS and Pinnacle assume APS will be reasonably successful in managing its regulatory relationships with an objective of achieving more timely recovery and an opportunity to earn a fair return. The rating also incorporates an expectation that APS will maintain a balanced approach with regards to financing its capital expenditures with a goal of maintaining or improving its current level of financial strength.

The most important drivers of the rating and outlook are as follows:

Predominately Regulated Operations

Pinnacle engages in a modest amount of non-regulated activity; however, it currently derives almost all of its operating cash flow from its regulated electric utility subsidiary APS. Pinnacle's non-regulated operations include a limited amount of energy trading, sales of energy-related products and services and commercial and residential real estate development primarily in Arizona and the southwest. Although residential real estate sales have slowed considerably in 2006, 2007 and in 2008, Pinnacle's joint venture strategy with other developers, combined with its successfully completed asset sales program (implemented 2003-2005) has significantly reduced its exposure to this volatile sector. In 2006 and 2007, as expected, these operations contributed only modestly to consolidated cash flows. Pinnacle anticipates continued weak real estate markets in 2008 and 2009.

Regulatory Environment

Almost all of APS' operations are regulated which is generally viewed as positive for credit quality as regulated cash flows tend to be more stable and predictable than those of unregulated companies. This key factor is tempered somewhat by the historically challenging regulatory environment in Arizona, which Moody's ranks as below average for U.S. regulatory jurisdictions in terms of supportiveness or predictability and stability of regulated cash flows.

APS' operations are regulated by the ACC, an elected commission that has tended to render its decisions after prolonged consideration. Although regulatory lag remains a significant concern, recent decisions with regards to costs for fuel and purchased power and transmission, and certain growth related expenditures should reduce the time to recover some of these items.

General Regulatory Lag

APS' rate case activity is illustrative of an environment where there has tended to be below average assurance of timely recovery of costs and the ability to earn a reasonable return on investment. APS' 2003 rate case was not concluded until April 2005, and the increase received was less than half of the amount requested; the significant delay and relatively modest allowed increase resulted in the need for APS to quickly file another rate case in January 2006.

APS' January 2006 rate case was decided somewhat more quickly with a decision rendered in June 2007 wherein the utility received approximately three quarters of its requested increase; however, the allowed increase was almost entirely related to increased costs for fuel and purchased power. Of the \$120 million requested for non-fuel items, only \$7 million was approved. As a result, APS filed another general rate case as soon as practicable, based on a test year-ending September 2007. APS subsequently agreed with ACC Staff to re-file its rate increase request based on a test year-ending December 2007. Given the amount of time generally required to decide rate cases in Arizona, Moody's estimates that new rates will not be implemented until the latter part of 2009.

Reduced Regulatory Lag for Certain Items

The ACC's June 2007 decision included a significantly improved mechanism for the recovery of fuel and purchased power costs, incorporating a forward estimate of fuel costs in addition to the continued recovery of past deferrals. Fuel and purchased power costs have been among APS' most volatile operating expenses and Moody's views the ACC's recent approach to this problem as supportive of the utility's credit profile. However, we note that APS fuel recovery factor remains subject to an annual cap, potentially delaying recoveries beyond a one-year true-up period, and subject to a 90/10 sharing mechanism wherein 10% of costs are not able to be recovered.

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In June 2008, APS requested an interim base rate increase that would take effect upon expiration in July 2008 of a surcharge being collected under the fuel clause adjustment mechanism. The request could potentially allow base rate cost recovery, subject to refund, prior to the completion of the next general rate case. This could result in a measure of rate stability as there could potentially be no immediate incremental increase to customers, and there would likely ultimately be a smaller base rate increase. Since the ACC and interested parties needed more time to consider this request, a decision is now expected late September to mid October. If implemented new rates could be in place November 1 when lower winter rates go into effect, thereby allowing some degree of rate stability. Moody's notes that the ACC has granted interim increases in the recent past. Moody's views mechanisms designed to reduce the time required to recover a utility's costs, such as the requested interim base rate increase as positive for credit quality.

In its June 2007 order, the ACC requested that APS propose mechanisms that could potentially allow growth to pay for itself, rather than being paid by the current customer base. In February 2008, the ACC approved an amendment to APS' line extension schedule that should provide an almost immediate recovery of the cost of certain growth related capital investment reducing the amount of external financing needed to support these expenditures. Moody's views this revision as positive for credit, virtually eliminating the normal regulatory lag that would otherwise be associated with seeking recovery of these expenditures.

In its 2005 order, the ACC authorized a transmission tracking adjustment (TCA) mechanism designed to allow retail transmission charges to track those authorized by the FERC. The TCA was initially implemented in March 2008, and timely adjusted following an automatic adjustment in FERC transmission rates in June 2008.

Service Territory Growth Slowing

Growth in APS' service territory has slowed significantly below the 4-5% level experienced in 2005 and 2006. In 2007, customer growth was approximately 3%; for the first quarter of 2008 customer growth slowed to 2% and is not expected to return to historical heights over the near-to-medium term. Although, a growing customer base can provide a source of increased revenue, assuming timely recovery of increased growth related investment and increased costs for fuel and purchased power, it also has resulted in a continuing need for capital investment and regulatory relief. The stable outlook assumes APS will continue to take a balanced approach with regards to the funding of its capital expenditures. Moody's also believes a sustained period of slower growth could potentially temper APS need for capital investment which could reduce its financing requirements.

Real Estate Exposure

SunCor Development Company (SunCor), Pinnacle's real estate development subsidiary, is exposed to the volatility inherent in the western real estate markets; however, currently this exposure is relatively modest. In 2005, SunCor completed the last phase of a three year accelerated asset sales program during which time it sent meaningful (\$50-100 million per year) dividends to Pinnacle. In 2006 and 2007, SunCor sent Pinnacle a dividend of approximately \$10 million. In 2008, only modest, if any, dividends are anticipated from SunCor which has been impacted by the general slowdown in the real estate market and lower residential sales. SunCor's commercial sales remained stronger than residential sales; however, several anticipated 2007 closings, including an office tower at Hayden Ferry Lakeside, were delayed due to conditions in the credit markets. SunCor successfully closed the Haden Ferry Lakeside transaction in June 2008.

SunCor mitigates its exposure to the more volatile aspects of the sector by developing its investments via joint ventures with participating land owners. The company's strategy involves generally making only modest investments until sales agreements are in place. In 2007, SunCor contributed approximately \$24 million to Pinnacle's consolidated net income, versus approximately \$60 million in 2006, and \$55 million in 2005. In 2008, only minimal, if any, earnings are anticipated from SunCor. The subsidiary is not expected to be a significant driver of consolidated earnings or cash flow over the near-to-medium term. SunCor is also not expected to require any additional investment from Pinnacle as the subsidiary is expected to continue to self-fund its investments and has its own non-recourse credit facilities in place.

Financial Metrics

In 2004 and 2005, Pinnacle's key financial metrics reflected the fact that APS had been unable to recover increased costs for fuel and purchased power on a timely basis. For example, the ratio of cash from operations prior to changes in working capital (CFO pre-WC) to adjusted debt (incorporating Moody's standard analytic adjustments) dropped into the mid-teens in 2004 and 2005 then moving to the upper-teens in 2006 and 2007, as fuel recovery improved. These recent ratios are toward the middle of the 13% to 25% range identified in Moody's Rating Methodology for Global Regulated Electric Utilities for Baa rated utility companies within the medium risk category. Given Pinnacle's position toward the mid-to-upper end of the medium business risk category, these metrics are consistent with its Baa3 rating. Cash flow credit metrics are expected to remain in that range over the

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near-to-medium term, reflecting more timely cost recovery of certain items at APS and assuming capital expenditures are financed in a manner that is also supportive of Pinnacle's current financial strength and flexibility. In general, Moody's would look for Pinnacle to have financial metrics that are somewhat stronger than comparably rated utility parent companies that operate in more supportive regulatory environments and that have a lower level of overall business risk.

Liquidity Profile

As a holding company, Pinnacle's primary source of liquidity is the dividends it receives from its operating subsidiaries, primarily its utility subsidiary, APS. In 2006 and 2007, subsidiary dividends of approximately \$180 million covered approximately 77% of Pinnacle's overhead costs, parent level interest expenses of approximately \$17 million and common stock dividends of approximately \$210 million.

While the dividends Pinnacle receives from SunCor have decreased considerably from approximately \$100 million in 2003 to \$10 million in 2006 and 2007, the annual dividends it receives from APS have been very stable at \$170 million per year. Moody's expects APS' dividends are likely to remain near this level in 2008 and over the medium term.

Pinnacle's \$250 million commercial paper program is supported by a \$300 million revolving credit facility that expires December 2010. As of March 31, 2008, Pinnacle had approximately \$145 million of commercial paper outstanding. APS also has its own \$250 million commercial paper program that is supported by two of its own committed lines of credit totaling \$900 million, a \$400 million line that expires in December 2010 and a \$500 million line that expires in September 2011. As of March 31, 2008, APS had approximately \$100 million of borrowings under its credit facilities. Overall availability under these credit facilities was \$796 million, of which \$90 million was back-stopping commercial paper outstanding.

The credit agreements for both Pinnacle and APS have one financial covenant that requires the ratio of debt to total capitalization not to exceed 65%. At March 31, 2008, total debt to total capitalization was approximately 51% for Pinnacle and 47% for APS. None of the credit agreements for Pinnacle or APS require a Material Adverse Change (MAC) representation for revolver borrowings or rating triggers for early repayment though interest costs may increase under various financing agreements if a downgrade occurs. SunCor has its own \$150 million secured revolving facility that terminates in December 2008, under which there was approximately \$85 million outstanding as of December 2007. SunCor also had some, primarily two-year, construction loans aggregating under \$150 million due primarily in 2008 and 2009. The SunCor loans and revolver are secured by specific interests in land, commercial properties, land contracts and/or homes under construction and are non-recourse to Pinnacle.

On a consolidated basis, capital expenditures in 2008 are expected to be approximately \$1 billion, with approximately \$50 million at SunCor. APS is expected to finance its capital expenditures from internal and external sources, including equity infusions from Pinnacle. SunCor is expected to finance its capital expenditures via a combination of its own operating cash flow and external financing.

Long-term debt at the Pinnacle parent level is limited to a \$175 million of 5.91% senior notes due February 2011.

Pinnacle's Prime-3 rating for its short-term obligations assumes that the company will manage the amount of commercial paper and other near term obligations outstanding within the limits of its readily available sources of cash, including its committed bank credit facilities.

Rating Outlook

The stable outlook for Pinnacle reflects the nature of APS' predominately regulated cash flows and Moody's view that its improved cash flow financial metrics are likely to be sustainable. The outlook assumes APS' will be reasonably successful in managing its regulatory relationships and that capital expenditures will be financed in a balanced manner with a goal of maintaining or improving Pinnacle's current position of financial strength.

What Could Change the Rating - Up

Pinnacle' rating is not likely to be revised upward in the near-to-medium term. Longer term, if there to be an increase in supportive regulatory treatment at APS resulting in material, timely rate increases, or if there were to be material reductions in costs or leverage such that Moody's could anticipate key financial ratios improving significantly from their current levels, if for example, a ratio of CFO pre -WC / debt could be maintained in the low twenty percent range.

What Could Change the Rating - Down

A downgrade could result if Palo Verde experiences an extended outage and APS is unable to recover, in a timely manner, higher maintenance and purchased power costs, or if APS' regulatory lag for capital spending becomes more pronounced. A downgrade could result if Moody's expects a sustained weakening of financial metrics, if for example, the ratio of CFO pre -WC / debt would remain below the mid-teens for an extended period. A downgrade could also result if there were to be an increase in Pinnacle's consolidated business risk profile; if for example, it were to materially increase its investment in, or its commitments to its more volatile, non-regulated operations, including SunCor.

Rating Factors**Pinnacle West Capital Corporation**

609400

Select Key Ratios for Global Regulated Electric Utilities

Rating	Aa	Aa	A	A	Baa	Baa	Ba	Ba
Level of Business Risk	Medium	Low	Medium	Low	Medium	Low	Medium	Low
CFO pre-W/C to Interest (x) [1]	>6	>5	3.5-6.0	3.0-5.7	2.7-5.0	2-4.0	<2.5	<2
CFO pre-W/C to Debt (%) [1]	>30	>22	22-30	12-22	13-25	5-13	<13	<5
CFO pre-W/C - Dividends to Debt (%) [1]	>25	>20	13-25	9-20	8-20	3-10	<10	<3
Total Debt to Book Capitalization (%)	<40	<50	40-60	50-70	50-70	60-75	>60	>70

[1] CFO pre-W/C, which is also referred to as FFO in the Global Regulated Electric Utilities Rating Methodology, is equal to net cash flow from operations less net changes in working capital items

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ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172
JULY 31, 2008

Staff Interim 2.59 Net cash flow to capital expenditures. (a) Provide all information related to the portion of its net cash flow to total capital expenditures for 2008 and 2009 that APS has. (b) Please provide estimates of net cash flow to total capital expenditures under the following scenarios, \$115 million of interim rates effective 11/15/08, and assuming respectively that APS were to be granted permanent rates by October 1, 2009 at each of the following: (1) 100% of APS's request \$278; (2) 75% of that permanent rate request; (3) 50% of that permanent rate request; (4) 41% of the permanent rate request; and (4) 25% of the permanent rate request. (c) Please provide estimates of net cash flow to total capital expenditures under the following scenarios, one-half of the \$115 million of interim rates effective 11/15/08, and assuming respectively that APS were to be granted permanent rates by October 1, 2009 at each of the following: (1) 100% of APS's request \$278; (2) 75% of that permanent rate request; (3) 50% of that permanent rate request; (4) 41% of the permanent rate request; and (4) 25% of the permanent rate request. (d) Please provide estimates of net cash flow to total capital expenditures under the following scenarios, none of the \$115 million of interim rates effective 11/15/08, and assuming respectively that APS were to be granted permanent rates by October 1, 2009 at each of the following: (1) 100% of APS's request \$278; (2) 75% of that permanent rate request; (3) 50% of that permanent rate request; (4) 41% of the permanent rate request; and (4) 25% of the permanent rate request. (e) Please include Excel files electronically for the calculations provided in response to parts a-d, above.

Supplemental Response:

As indicated in APS's initial response, APS and Staff agreed that APS would provide six of the scenarios requested. Attached hereto as APS13349 is a summary of the supplemental response, and attached as APS13350 through APS13355 are the detailed calculations of these scenarios in Excel format.

Second Supplemental Response:

Staff requested and APS agreed to provide four more of the scenarios requested. Attached hereto as APS13356 is a summary of all 10 cases APS has provided, and attached as APS13357 through APS13360 are the detailed calculations of the four additional scenarios in Excel format.

Witness: Donald Brandt

Staff Interim Data Request 2.59 and 2.60 - Case Summaries(\$M)

Case #1 - Staff Interim 2.59 and 2.60

100% of \$115M Interim Nov'08, 100% Fuel Incr 10/01/09 (7%), 100% of Non-Fuel Increase (10%)

Rate Increase	2008	2009	2010
Fuel Related Increase - 10/01/09 - 7.0%	-	42	193
Non Fuel Related -10/01/09 - Bal of 10.0%	-	60	277
Interim - (11/01/08 if applied) - 100%	16	88	-
Case #1 Rate Increase Revenues-\$Ms	16	190	470
APS Earnings	282	336	409
FFO / Adjusted Total Debt	23.3%	20.7%	21.3%
Net Cash Flow as a % of CapEx	72%	65%	75%
APS ROE	8.0%	8.6%	9.7%
APS ACC ROE	8.7%	9.1%	10.8%

Case #3 - Staff Interim 2.59 and 2.60

50% of \$115M Interim Nov'08, 100% Fuel Incr 10/01/09 (7%), 100% of Non-Fuel Increase (10%)

Rate Increase	2008	2009	2010
Fuel Related Increase - 10/01/09 - 7.0%	-	42	193
Non Fuel Related -10/01/09 - Bal of 10.0%	-	60	277
Interim - (11/01/08 if applied) - 50%	8	44	-
Case #3 Rate Increase Revenues-\$Ms	8	146	470
APS Earnings	278	309	406
FFO / Adjusted Total Debt	23.2%	19.9%	21.0%
Net Cash Flow as a % of CapEx	72%	63%	74%
APS ROE	7.9%	7.9%	9.7%
APS ACC ROE	8.5%	8.3%	10.8%

Case #5 - Staff Interim 2.59 and 2.60

No \$115M Interim, 100% Fuel Incr 10/01/09 (7%), 100% of Non-Fuel Increase (10%)

Rate Increase	2008	2009	2010
Fuel Related Increase - 10/01/09 - 7.0%	-	42	193
Non Fuel Related -10/01/09 - 10.0%	-	60	277
Interim - (11/01/08 if applied) - 0%	-	-	-
Case #5 Rate Increase Revenues-\$Ms	-	102	470
APS Earnings	273	282	405
FFO / Adjusted Total Debt	23.0%	19.1%	20.8%
Net Cash Flow as a % of CapEx	71%	60%	74%
APS ROE	7.8%	7.3%	9.7%
APS ACC ROE	8.4%	7.6%	10.8%

Case #2 - Staff Interim 2.59 and 2.60

100% of \$115M Interim Nov'08, 100% Fuel Incr 10/01/09 (7%), 50% of Non-Fuel Increase (5%)

Rate Increase	2008	2009	2010
Fuel Related Increase - 10/01/09 - 7.0%	-	42	193
Non Fuel Related -10/01/09 - Bal of 5.0%	-	30	139
Interim - (11/01/08 if applied) - 100%	16	88	-
Case #2 Rate Increase Revenues-\$Ms	16	160	332
APS Earnings	282	318	322
FFO / Adjusted Total Debt	23.3%	20.2%	18.9%
Net Cash Flow as a % of CapEx	72%	64%	66%
APS ROE	8.0%	8.1%	7.7%
APS ACC ROE	8.7%	8.5%	8.3%

Case #4 - Staff Interim 2.59 and 2.60

50% of \$115M Interim Nov'08, 100% Fuel Incr 10/01/09 (7%), 50% of Non-Fuel Increase (5%)

Rate Increase	2008	2009	2010
Fuel Related Increase - 10/01/09 - 7.0%	-	42	193
Non Fuel Related -10/01/09 - Bal of 5.0%	-	30	139
Interim - (11/01/08 if applied) - 50%	8	44	-
Case #4 Rate Increase Revenues-\$Ms	8	116	332
APS Earnings	278	291	320
FFO / Adjusted Total Debt	23.2%	19.4%	18.7%
Net Cash Flow as a % of CapEx	72%	61%	66%
APS ROE	7.9%	7.5%	7.8%
APS ACC ROE	8.5%	7.8%	8.4%

Case #6 - Staff Interim 2.59 and 2.60

No \$115M Interim, 100% Fuel Incr 10/01/09 (7%), 50% of Non-Fuel Increase (5%)

Rate Increase	2008	2009	2010
Fuel Related Increase - 10/01/09 - 7.0%	-	42	193
Non Fuel Related -10/01/09 - 5.0%	-	30	139
Interim - (11/01/08 if applied) - 0%	-	-	-
Case #6 Rate Increase Revenues-\$Ms	-	72	332
APS Earnings	273	264	319
FFO / Adjusted Total Debt	23.0%	18.7%	18.5%
Net Cash Flow as a % of CapEx	71%	59%	66%
APS ROE	7.8%	6.8%	7.8%
APS ACC ROE	8.4%	7.0%	8.5%

Staff Interim Data Request 2.59 and 2.60 - Case Summaries(\$M)

#7 - Staff Interim 2.59 and 2.60

of \$115M Interim Nov'08, 100% Fuel Incr 10/01/09 (7%), 75% of Non-Fuel Increase (7.5%)

Rate Increase	2008	2009	2010
Fuel Related Increase - 10/01/09 - 7.0%	-	42	193
Non Fuel Related -10/01/09 - Bal of 7.5%	-	45	207
Interim - (11/01/08 if applied) - 50%	8	44	-
Case #7 Rate Increase Revenues- \$Ms	8	131	400
APS Earnings	278	300	363
FFO / Adjusted Total Debt	23.2%	19.7%	19.8%
Net Cash Flow as a % of CapEx	72%	62%	70%
APS ROE	7.9%	7.7%	8.7%
APS ACC ROE	8.5%	8.0%	9.6%

#9 - Staff Interim 2.59 and 2.60

115M Interim, 100% Fuel Incr 10/01/09 (7%), 75% of Non-Fuel Increase (7.5%)

Rate Increase	2008	2009	2010
Fuel Related Increase - 10/01/09 - 7.0%	-	42	193
Non Fuel Related -10/01/09 - 7.5%	-	45	207
Interim - (11/01/08 if applied) - 0%	-	-	-
Case #9 Rate Increase Revenues- \$Ms	-	87	400
APS Earnings	273	273	362
FFO / Adjusted Total Debt	23.0%	18.9%	19.7%
Net Cash Flow as a % of CapEx	71%	59%	70%
APS ROE	7.8%	7.0%	8.8%
APS ACC ROE	8.4%	7.3%	9.7%

Case #8 - Staff Interim 2.59 and 2.60

50% of \$115M Interim Nov'08, 100% Fuel Incr 10/01/09 (7%), 25% of Non-Fuel Increase (2.5%)

Rate Increase	2008	2009	2010
Fuel Related Increase - 10/01/09 - 7.0%	-	42	193
Non Fuel Related -10/01/09 - Bal of 2.5%	-	15	69
Interim - (11/01/08 if applied) - 50%	8	44	-
Case #8 Rate Increase Revenues- \$Ms	8	101	262
APS Earnings	278	282	277
FFO / Adjusted Total Debt	23.2%	19.2%	17.6%
Net Cash Flow as a % of CapEx	72%	60%	61%
APS ROE	7.9%	7.2%	6.8%
APS ACC ROE	8.5%	7.5%	7.2%

Case #10 - Staff Interim 2.59 and 2.60

No \$115M Interim, 100% Fuel Incr 10/01/09 (7%), 25% of Non-Fuel Increase (2.5%)

Rate Increase	2008	2009	2010
Fuel Related Increase - 10/01/09 - 7.0%	-	42	193
Non Fuel Related -10/01/09 - 2.5%	-	15	69
Interim - (11/01/08 if applied) - 0%	-	-	-
Case #10 Rate Increase Revenues- \$Ms	-	57	262
APS Earnings	273	255	275
FFO / Adjusted Total Debt	23.0%	18.4%	17.4%
Net Cash Flow as a % of CapEx	71%	58%	61%
APS ROE	7.8%	6.6%	6.8%
APS ACC ROE	8.4%	6.7%	7.2%

ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172
JULY 31, 2008

Staff Interim 2.60 FFO/Debt. (a) Provide all information related to the portion of its FFO/Debt for 2008 and 2009 that APS has. (b) Please provide estimates of FFO/Debt under the following scenarios, \$115 million of interim rates effective 11/15/08, and assuming respectively that APS were to be granted permanent rates by October 1, 2009 at each of the following: (1) 100% of APS's request \$278; (2) 75% of that permanent rate request; (3) 50% of that permanent rate request; (4) 41% of the permanent rate request; and (4) 25% of the permanent rate request. (c) Please provide estimates of FFO/Debt under the following scenarios, one-half of the \$115 million of interim rates effective 11/15/08, and assuming respectively that APS were to be granted permanent rates by October 1, 2009 at each of the following: (1) 100% of APS's request \$278; (2) 75% of that permanent rate request; (3) 50% of that permanent rate request; (4) 41% of the permanent rate request; and (4) 25% of the permanent rate request. (d) Please provide estimates of FFO/Debt under the following scenarios, none of the \$115 million of interim rates effective 11/15/08, and assuming respectively that APS were to be granted permanent rates by October 1, 2009 at each of the following: (1) 100% of APS's request \$278; (2) 75% of that permanent rate request; (3) 50% of that permanent rate request; (4) 41% of the permanent rate request; and (4) 25% of the permanent rate request. (e) Please include Excel files electronically for the calculations provided in response to parts a-d, above.

Supplemental Response:

See APS's supplemental response to Staff Interim 2.59.

Second Supplemental Response:

See APS's second supplemental response to Staff Interim 2.59.

Witness: Donald Brandt

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U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

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U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

The electric, gas, and water utility ratings ranking lists published today by Standard & Poor's U.S. Utilities & Infrastructure Ratings practice are categorized under the business risk/financial risk matrix used by the Corporate Ratings group. This is designed to present our rating conclusions in a clear and standardized manner across all corporate sectors. Incorporating utility ratings into a shared framework to communicate the fundamental credit analysis of a company furthers the goals of transparency and comparability in the ratings process. Table 1 shows the matrix.

Table 1

Business Risk/Financial Risk					
Business Risk Profile	Financial Risk Profile				
	Minimal	Modest	Intermediate	Aggressive	Highly leveraged
Excellent	AAA	AA	A	BBB	BB
Strong	AA	A	A-	BBB-	BB-
Satisfactory	A	BBB+	BBB	BB+	B+
Weak	BBB	BBB-	BB+	BB-	B
Vulnerable	BB	B+	B+	B	B-

The utilities rating methodology remains unchanged, and the use of the corporate risk matrix has not resulted in any changes to ratings or outlooks. The same five factors that we analyzed to produce a business risk score in the familiar 10-point scale are used in determining whether a utility possesses an "Excellent," "Strong," "Satisfactory," "Weak," or "Vulnerable" business risk profile:

- Regulation,
- Markets,
- Operations,
- Competitiveness, and
- Management.

Regulated utilities and holding companies that are utility-focused virtually always fall in the upper range ("Excellent" or "Strong") of business risk profiles. The defining characteristics of most utilities—a legally defined service territory generally free of significant competition, the provision of an essential or near-essential service, and the presence of regulators that have an abiding interest in supporting a healthy utility financial profile—underpin the business risk profiles of the electric, gas, and water utilities.

As the matrix concisely illustrates, the business risk profile loosely determines the level of financial risk appropriate for any given rating. Financial risk is analyzed both qualitatively and quantitatively, mainly with financial ratios and other metrics that are calculated after various analytical adjustments are performed on financial statements prepared under GAAP. Financial risk is assessed for utilities using, in part, the indicative ratio ranges in table 2.

U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

Table 2

Financial Risk Indicative Ratios - U.S. Utilities

(Fully adjusted, historically demonstrated, and expected to consistently continue)

	Cash flow		Debt leverage
	(FFO/debt) (%)	(FFO/interest) (x)	(Total debt/capital) (%)
Modest	40 - 60	4.0 - 6.0	25 - 40
Intermediate	25 - 45	3.0 - 4.5	35 - 50
Aggressive	10 - 30	2.0 - 3.5	45 - 60
Highly leveraged	Below 15	2.5 or less	Over 50

The indicative ranges for utilities differ somewhat from the guidelines used for their unregulated counterparts because of several factors that distinguish the financial policy and profile of regulated entities. Utilities tend to finance with long-maturity capital and fixed rates. Financial performance is typically more uniform over time, avoiding the volatility of unregulated industrial entities. Also, utilities fare comparatively well in many of the less-quantitative aspects of financial risk. Financial flexibility is generally quite robust, given good access to capital, ample short-term liquidity, and the like. Utilities that exhibit such favorable credit characteristics will often see ratings based on the more accommodative end of the indicative ratio ranges, especially when the company's business risk profile is solidly within its category. Conversely, a utility that follows an atypical financial policy or manages its balance sheet less conservatively, or falls along the lower end of its business risk designation, would have to demonstrate an ability to achieve financial metrics along the more stringent end of the ratio ranges to reach a given rating.

Note that even after we assign a company a business risk and financial risk, the committee does not arrive by rote at a rating based on the matrix. The matrix is a guide—it is not intended to convey precision in the ratings process or reduce the decision to plotting intersections on a graph. Many small positives and negatives that affect credit quality can lead a committee to a different conclusion than what is indicated in the matrix. Most outcomes will fall within one notch on either side of the indicated rating. Larger exceptions for utilities would typically involve the influence of related unregulated entities or extraordinary disruptions in the regulatory environment.

We will use the matrix, the ranking list, and individual company reports to communicate the relative position of a company within its business risk peer group and the other factors that produce the ratings.

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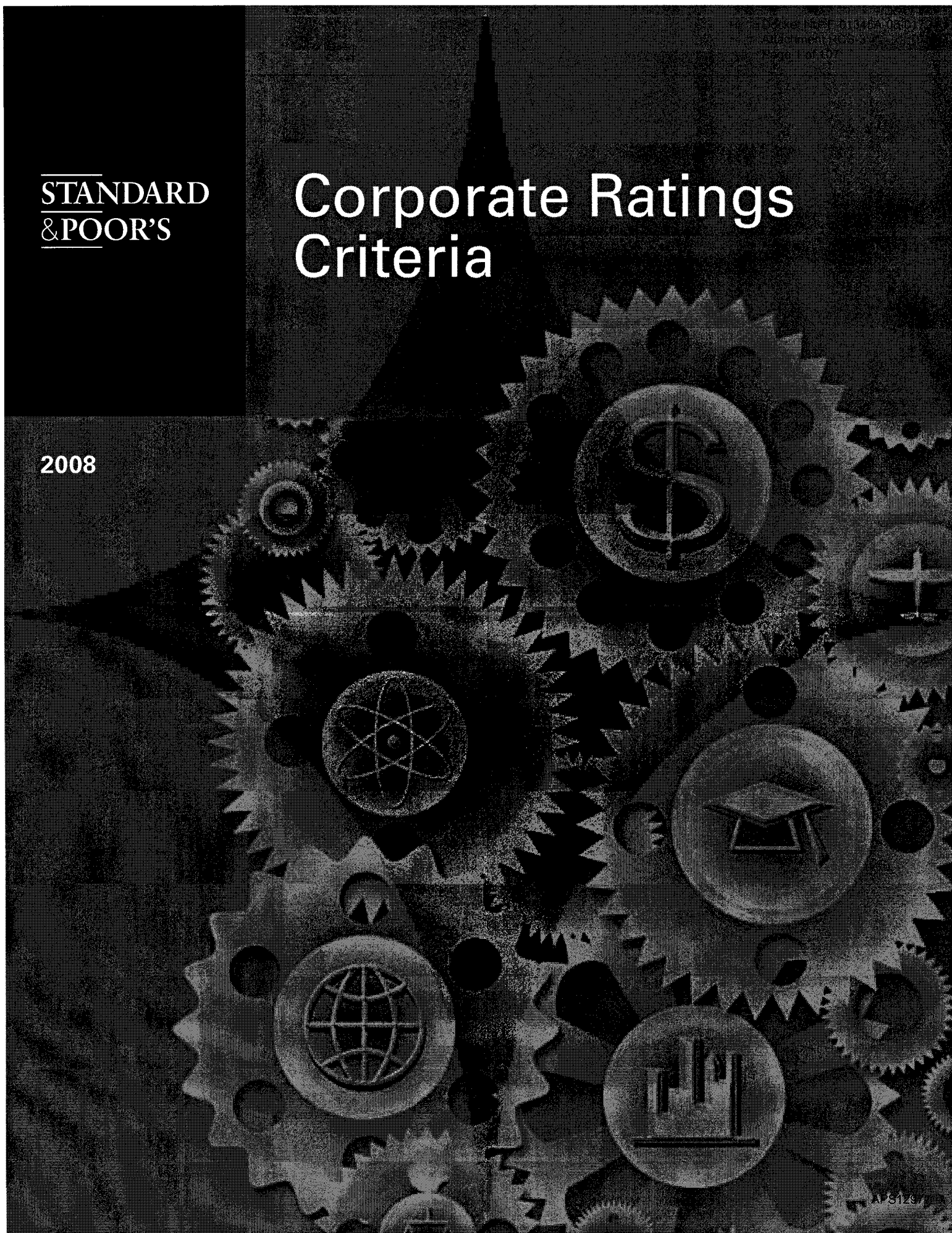
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Corporate Ratings Criteria

2008

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Attachment 008-3-2
Page 1 of 107





Corporate Ratings Criteria

2008

For the most complete and up-to-date ratings criteria, please visit
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To Our Clients

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Bear in mind, however, that a rating is, in the end, an opinion. The rating assignment is as much an art as it is a science.

A handwritten signature in black ink, appearing to read "Solomon B. Samson", with a long horizontal flourish extending to the right.

Solomon B. Samson
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Standard & Poor's Ratings— And Their Role In The Financial Markets

Standard & Poor's Ratings Services traces its history back to 1860. It currently is the leading credit rating organization and a major publisher of financial information and research services on U.S. and foreign corporate and municipal debt obligations. We now rate many trillions of dollars worth of bonds and other financial obligations of obligors in more than 50 countries. We rate and monitor developments pertaining to these issues and issuers from an office network based in 22 world financial centers.

Standard & Poor's was an independent, publicly owned corporation until 1966, when all of its common stock was acquired by McGraw-Hill Inc., a major publishing company. Standard & Poor's is now a business unit of McGraw-Hill. In matters of credit analysis and ratings, Standard & Poor's Credit Market Services operates entirely independently of McGraw-Hill. Other units of Standard & Poor's provide investment, financial, and trading information, data, and analyses—including on equity securities—but operate separately from the ratings group. Standard & Poor's operates with no government mandate and is independent of any investment banking company, bank, or similar organization.

What Is Standard & Poor's?

We are an organization of professionals that provides analytical services—high-quality, objective, value-added analytical information—to the world's financial markets.

We operate under the core values of:

- Independence;
- Objectivity;
- Credibility; and
- Disclosure.

Our recognition as a rating agency ultimately depends on investors' willingness to accept our judgment. We believe it is important that all of our ratings users understand how we arrive at those ratings, and we regularly publish ratings research and detailed reports on ratings criteria and methodology.

We began rating the debt of corporate and government issuers decades ago. Our credit rating criteria and methodology have grown in sophistication to keep pace with a more dynamic world, and the introduction of new financial products. For example, Standard & Poor's was the first major rating agency to assess the credit quality of, and assign credit ratings to, the claims-paying ability of insurance companies (1971); financial guarantees (1971); mortgage-backed bonds (1975);

Standard & Poor's Ratings—And Their Role In The Financial Markets

mutual funds (1983); asset-backed securities (1985); and secured loan recovery (2003). Over the years, these credit ratings have achieved wide investor acceptance as easily usable tools for differentiating credit quality.

The Rating Process Has Many Facets

Many of the practices described here are governed by specific statements of policy, which can be located on sandp.com/Ratings/FormNRSRO/Exhibits 2, 3, and 7.

Standard & Poor's provides ratings only when there is adequate information available to form a credible opinion, and only after applicable quantitative, qualitative, and legal analyses are performed. The analytical framework is divided into several categories to ensure that salient qualitative and quantitative issues are considered. For example, regarding industrial companies, the qualitative categories are oriented to business analysis, such as the company's competitiveness within its industry and the caliber of management; the quantitative categories relate to financial risk.

The rating process is not limited to an examination of various financial measures. Proper assessment of credit quality for an industrial company includes a thorough review of business fundamentals, including industry prospects for growth and vulnerability to technological change, labor unrest, or regulatory actions. (Other sectors emphasize factors that are especially relevant to entities in that sector. For example, public finance ratings involve an evaluation of the basic underlying economic strength of the public entity, as well as the effectiveness of the governing process to address problems. In financial institutions, the reputation of the bank or company may have an impact on the future financial performance and the institution's ability to repay its obligations.)

We assemble a team of analysts with appropriate expertise to review information pertinent to the rating. A lead analyst is responsible for conducting the analysis and coordinating the rating process. Members of the analytical team meet with the rated entity's management to review, in detail, key factors that could

affect on the rating, including operating and financial plans and management policies. The meeting also helps analysts develop the qualitative assessment of management itself, an important factor in many rating decisions.

Following this review and discussion, a rating committee meeting is convened. At the meeting, the committee discusses the lead analyst's recommendation and the facts and expectations supporting the rating. Finally, the voting members of the committee vote on the recommendation.

The issuer subsequently is notified of the rating and the major considerations supporting it. A rating can be appealed prior to its publication—if meaningful new or additional information is to be presented by the issuer. Obviously, there is no guarantee that any new information will alter the rating committee's decision.

Once a final rating is assigned, it is disseminated to the public via RatingsDirect, S&P.com, and the news media, together with the rationale and other commentary.

In the U.S., Standard & Poor's assigns and publishes its ratings irrespective of issuer request, if the financing is a public deal. In the case of private transactions, the company has publication rights. In most markets outside the U.S., ratings are assigned only on request, so the company can choose to make its rating public or to keep it confidential. (Confidential ratings are disclosed by us only to parties designated by the rated entity.)

Surveillance And Review Are Ongoing

All ratings are monitored, including continual review of new financial or economic information. Our surveillance is ongoing, meaning we staying abreast of all current developments. Moreover, it is routine to schedule annual review meetings with management, even in the absence of the issuance of new obligations or apparent reason to question the extant rating or outlook. These meetings enable analysts to discuss potential problem areas and be apprised of any changes in the issuer's plans.

As a result of the surveillance process, it is sometimes necessary to reassess the rating or

outlook. The lead analyst initiates a review, conducted in a similar fashion to the initial rating assignment process. In the interim, we place the ratings on CreditWatch, if we believe the likelihood of a rating change is sufficiently high. The review entails a comprehensive analysis—including, if warranted, a meeting with management—and a presentation to a rating committee. The rating committee evaluates the circumstances, arrives at decisions on ratings and outlooks, notifies the issuer, and entertains an appeal, if one is made (and meets our policy for accepting appeals). After this process, all ratings and outlooks—whether changed or affirmed—are announced.

Issuers' Use Of Ratings

It is common for companies to structure financing transactions to reflect rating criteria so they qualify for higher ratings. However, the actual structuring of a given issue is the exclusive function and responsibility of an issuer and its advisors. We develop and publish criteria as new financing alternatives are proposed. We will also react to a proposed financing, apply and interpret criteria for a type of issue, and outline the rating implications for the benefit of an issuer, underwriter, bond counsel, or financial advisor—but we do not function as an investment banker or financial advisor. Adopting such a role ultimately would impair the objectivity and credibility that are vital to our continued performance as an independent rating agency. Our guidance also is sought on sundry credit quality issues that might affect the rating opinion. For example, companies solicit our view on hybrid preferred stock, the monetization of assets, or other innovative financing techniques before putting these into practice. Nor is it uncommon for debt issuers to undertake specific and sometimes significant actions for the sake of maintaining their ratings. For example, one large company faced a downgrade of its 'A-1' commercial paper rating because of a growing component of short-term, floating-rate debt. To keep its rating, the company chose to restructure its debt maturity schedule in a way consistent with our view of what was consistent with the profile of an 'A' rated credit.

Some companies go one step further, incorporating specific rating objectives as corporate goals. Indeed, earning an 'A' rating, or at least an investment-grade rating, affords companies a measure of flexibility and may be worthwhile as part of an overall financial strategy. Beyond that, we do not encourage companies to manage themselves with an eye toward a specific rating. The more appropriate approach is to operate for the good of the business as management sees it and to let the rating follow. Ironically, managing for a very high rating can sometimes be inconsistent with the company's ultimate best interests, if it means being overly conservative and forgoing opportunities.

Several Types Of Credit Ratings

A Standard & Poor's credit rating is our opinion of the general creditworthiness of an obligor (issuer credit rating/corporate credit rating), or the credit risk associated with a particular debt security or other financial obligation (issue rating).

A rating does not constitute a recommendation to purchase, sell, or hold a particular security. In addition, a rating does not comment on the liquidity of the rated instrument—or any other element affecting suitability of an investment for a particular investor (including currency, interest rate, and prepayment risk).

Credit ratings are based on information furnished by the obligors or obtained by us from other sources we consider reliable. Although we look at information we receive with a critical eye, we do not perform any kind of audit (of financial statements or transactions) in connection with any credit rating—and may, on occasion, rely on unaudited financial information. Credit ratings may be changed, suspended, or withdrawn as a result of changes in, or unavailability of, such information.

We maintain separate and well-established rating scales for long-term and short-term instruments. (A separate scale for preferred stock was integrated with the debt scale in February 1999. There is an additional scale exclusively for medium-term municipal notes.)

In non-'AAA' transfer and convertibility (T&C) zones, we assign both foreign- and

Standard & Poor's Ratings—And Their Role In The Financial Markets

local-currency issuer credit ratings. We also have introduced several national scale ratings, applicable in specific countries, and recovery ratings, which opine on loss given default.

Long-term credit ratings are divided into several categories, ranging from 'AAA'—reflecting the strongest credit quality—to 'D', reflecting the lowest. Long-term ratings from 'AA' to 'CCC' may be modified by the addition of a plus or minus sign to show relative standing within the major rating categories.

A short-term credit rating is an assessment of an issuer's credit quality with respect to an instrument considered short term in the relevant market. Short-term ratings range from 'A-1', for the highest-quality obligations, to 'D', for the lowest. The 'A-1' rating may also be modified by a plus sign to distinguish the strongest credits in that category.

Issuer Credit Ratings

We provide issuer credit ratings—an opinion of the obligor's overall capacity and willingness to meet its financial obligations as they come due—whether rated or not. Default on any of these leads to an issuer rating of 'D' or 'SD' (*see Definitions, page 11*).

However, if payment is withheld due to disputes (as may pertain to operating or lease obligations), we do not deem this to be a default. Our issuer credit rating is not specific to any particular financial obligation, because it does not take into account the specific nature or provisions of any particular obligation. Such ratings do not take into account recovery prospects or statutory or regulatory preferences, nor do they take into account the creditworthiness of guarantors, insurers, or other forms of credit enhancement that may pertain to a specific obligation. (However, when we believe that support from a third party—such as an affiliate or government—would benefit the issuer in ways that make the overall risk of default more remote, such support is factored into the rating.)

Counterparty ratings, corporate credit ratings, and sovereign credit ratings are all forms of issuer credit ratings. Because a corporate credit rating provides an overall assessment of a company's creditworthiness, it is used for a

variety of financial and commercial purposes, such as negotiating long-term leases or minimizing the need for a letter of credit for vendors. If the credit rating is not assigned in conjunction with a rated public financing, the company can choose to make its rating public or to keep it confidential.

Credit ratings can be either long or short term. Short-term ratings are assigned to those obligations considered short term in the relevant market. In the U.S., for example, that means obligations with an original maturity of no more than 365 days, including commercial paper. Commercial paper ratings pertain to the program established to sell these notes. There is limited review of individual notes. Nonetheless, such program ratings characterize the notes as "rated paper."

Short-term ratings also are used to indicate the creditworthiness of an obligor with respect to put features on long-term obligations. The result is a dual rating, in which the short-term rating addresses the put feature in addition to the usual long-term rating. Medium-term notes (MTNs) are assigned long-term ratings. A rating is assigned to the MTN program and, subsequently, to individual notes, as they are identified—and as applicable (in terms of tenor, seniority, and currency).

Issue-Specific Credit Ratings

Our issue credit rating is a current opinion of the credit risk pertaining to a specific financial obligation, a specific class of financial obligations, or a specific financial program. This opinion reflects, where applicable, the creditworthiness of guarantors, insurers, or other forms of credit enhancement on the obligation, and takes into account statutory and regulatory preferences. On a global basis, Standard & Poor's issue credit rating criteria have long identified the added country-risk factors that give external debt a higher default probability than domestic obligations. (In 1992, we revised our criteria to define external rather than domestic obligations by currency instead of by market of issuance. This led to the adoption of the local currency/foreign currency nomenclatures for issue credit ratings.) Because rating coverage now has

expanded to a growing range of emerging-market countries, and because Organisation for Economic Co-operation and Development (OECD)-based companies increasingly have expanded to emerging markets, the analysis of political, economic, and monetary risk factors are even more important.

Definitions

Our long-term issue ratings ('AAA' through 'D') are assigned to notes, note programs, certificate of deposit programs, bank loans, bonds and debentures; shelf registrations (preliminary), equipment trust certificates, and preferred stock and other hybrid securities. Debt types include secured, senior unsecured, subordinated, junior subordinated, and deferrable payment debt.

Short-term issue ratings ('A-1+' through 'D') apply to commercial paper programs and put bonds. (The rating type is determined by the initial tenor; once a long-term rating is applied, the approach of the maturity does not lead to re-rating with a short-term rating.)

Issue and issuer credit ratings use the identical symbols, but the definitions do not completely correspond to each other: Issuer ratings—and short-term issue ratings—reflect only the risk of default, but long-term issue ratings also incorporate a view of loss given default (either via a specific recovery analysis or by reflecting relative position of the obligation in the event of bankruptcy, reorganization, or other arrangement under the laws of bankruptcy and other laws affecting creditors' rights.)

Junior obligations typically are rated lower than the issuer credit rating, to reflect the lower priority in bankruptcy, as noted above. Debt that provides good prospects for ultimate recovery, such as well-secured debt, is rated higher than the issuer credit rating.

Recovery ratings ('1+' through '6') are our opinion of a specific issue's prospects regarding loss given default. We generally assign these ratings to the debt of speculative-grade companies. Wherever we assign a recovery rating, that rating forms the basis for notching the issue credit rating relative to the issuer rating.

Long-term ratings definitions

'AAA': An obligation rated 'AAA' has the highest rating we assign. The obligor's capacity to meet its financial commitment on the obligation is extremely strong.

'AA': An obligation rated 'AA' differs from the highest-rated obligations only to a small degree. The obligor's capacity to meet its financial commitment on the obligation is very strong.

'A': An obligation rated 'A' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher rated categories. However, the obligor's capacity to meet its financial commitment on the obligation is still strong.

'BBB': An obligation rated 'BBB' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.

Obligations rated 'BB', 'B', 'CCC', 'CC', and 'C' are regarded as having significant speculative characteristics. 'BB' indicates the least degree of speculation, and 'C' the highest. While such obligations likely will have some quality and protective characteristics, these may be outweighed by large uncertainties or major exposure to adverse conditions.

'BB': An obligation rated 'BB' is less vulnerable to nonpayment than other speculative issues. However, it faces major ongoing uncertainties or exposure to adverse business, financial, or economic conditions that could lead to the obligor's inadequate capacity to meet its financial commitment on the obligation.

'B': An obligation rated 'B' is more vulnerable to nonpayment than obligations rated 'BB', but the obligor currently has the capacity to meet its financial commitment on the obligation. Adverse business, financial, or economic conditions likely will impair the obligor's capacity or willingness to meet its financial commitment on the obligation.

'CCC': An obligation rated 'CCC' is vulnerable to nonpayment within one year, and depends on favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation.

Standard & Poor's Ratings—And Their Role In The Financial Markets

In the event of adverse business, financial, or economic conditions, the obligor is unlikely to have the capacity to meet its financial commitment on the obligation.

'CC': An obligation rated 'CC' currently is highly vulnerable to nonpayment.

'C': The 'C' rating is also used when a bankruptcy petition has been filed or similar action has been taken but payments on this obligation are being continued. 'C' is also used for a preferred stock that is in arrears (as well as for junior debt of issuers rated 'CCC-' and 'CC').

'D': Default; 'SD': Selective default. The 'D' and 'SD' ratings, unlike other ratings, are not prospective; rather, they are used only when a default actually has occurred—not when default is only expected.

Standard & Poor's changes ratings to 'D':

- On the day an interest and/or principal payment is due and is not paid. An exception is made if the instrument provides for a grace period and we believe a payment will be made within that period, in which case the rating can be maintained;
- Upon voluntary bankruptcy filing or similar action. (An exception is made for a specific issue if we expect debt-service payments will continue to be made on that issue.) In the absence of a payment default or bankruptcy filing, a technical default (e.g., covenant violation) is not sufficient for assigning a 'D' rating;
- Upon completion of a distressed exchange offer, whereby some or all of an issue is either repurchased for an amount of cash or replaced by other securities having a total value that clearly is less than par (even though the offer is well in excess of the security's current market price); or,
- In the case of ratings on preferred stock or deferrable payment securities, upon nonpayment of the dividend or deferral of the interest payment.

With respect to issuer credit ratings (i.e., corporate credit ratings, counterparty ratings, and sovereign ratings), failure to pay any financial obligation—rated or unrated—leads to either a 'D' or 'SD' rating. Ordinarily, an issuer's distress leads to general default, and the rating is 'D'. 'SD' is

assigned when an issuer can be expected to default selectively, i.e., continue to pay certain issues or classes of obligations while not paying others. This fact pattern normally is associated with sovereign government defaults. In the corporate context, selective default might apply when a company conducts a distressed or coercive exchange with respect to one or some issues, while intending to honor its obligations regarding other issues. (In fact, it is not unusual for a company to launch such an offer precisely with such a strategy—to restructure part of its debt to keep the company solvent.)

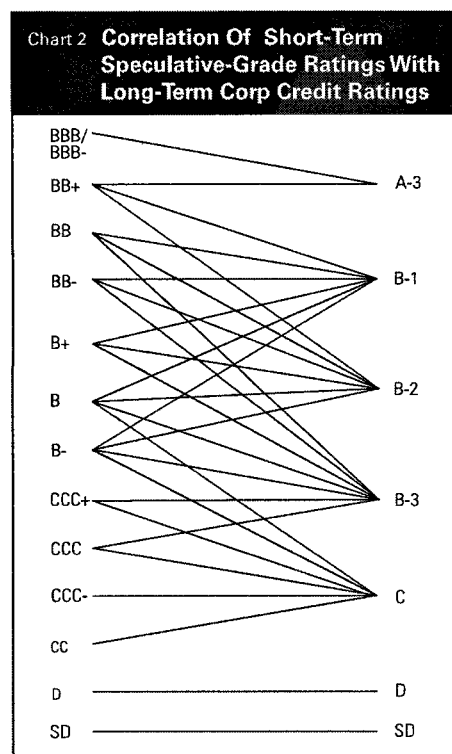
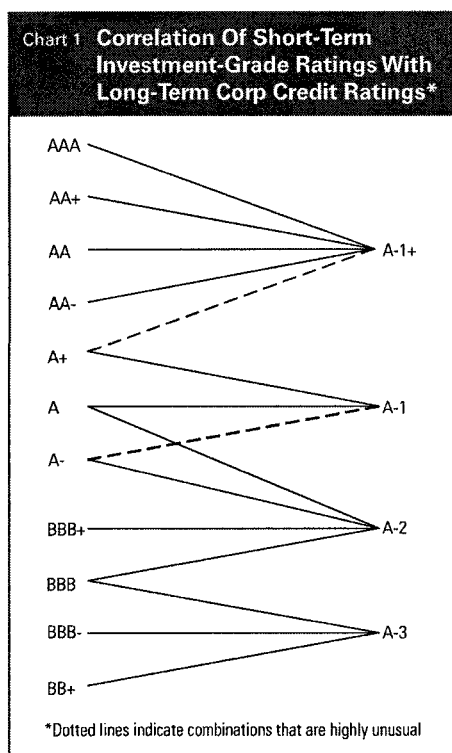
Nonpayment of a financial obligation subject to a bona fide commercial dispute or a missed preferred stock dividend does not cause the issuer credit rating to be changed.

Plus (+) or minus (-): The ratings from 'AA' to 'CCC' may be modified by the addition of a plus or minus sign to show relative standing within the major rating categories. In 1994, we introduced a symbol to be added to an issue credit rating when the instrument could have significant non-credit risk. The 'r' was added to such instruments as interest-only strips, inverse floaters, and instruments that pay non-fixed amounts at maturity, e.g., amounts based the value of a particular equity or a currency or stock index. The 'r' was intended to alert investors to non-credit risks and emphasizes that an issue credit rating addressed only the credit quality of the obligation; it was discontinued in July 2000.

Short-term ratings definitions

'A-1': A short-term obligation rated 'A-1' is in the highest category we rate. The obligor's capacity to meet its financial commitment on the obligation is strong. Within this category, certain obligations are designated with a plus sign (+). This indicates that the obligor's capacity to meet its financial commitment on these obligations is extremely strong.

'A-2': A short-term obligation rated 'A-2' is somewhat more susceptible to the adverse effects of changes in circumstances and economic conditions than obligations in higher rating categories. However, the obligor's capacity to meet its financial commitment on the obligation is satisfactory.



'A-3': A short-term obligation rated 'A-3' exhibits adequate protection parameters. However, adverse economic conditions or changing circumstances are more likely to lead to a weakened capacity of the obligor to meet its financial commitment on the obligation.

'B': A short-term obligation rated 'B' has, in our view, significant speculative characteristics. The obligor currently has the capacity to meet its financial commitment on the obligation; however, it faces major ongoing uncertainties that could lead to inadequate capacity to meet its financial commitment on the obligation. We expanded the 'B' short-term rating category in 2004 by dividing it into 'B-1', 'B-2', and 'B-3'.

'C': A short-term obligation rated 'C' currently is vulnerable to nonpayment and depends on favorable business, financial, and economic conditions for the obligor to meet its financial commitment on the obligation.

'D': The same as the long-term rating definition for 'D'.

Investment-grade, short-term ratings are highly correlated with long-term ratings (see *Commercial Paper* chapter of this book). Speculative-grade short-term ratings reflect less constraint regarding linkage to long-term ratings.

Investment And Speculative Grades

The term "investment grade" originally was used by various regulatory bodies to connote obligations eligible for investment by institutions such as banks, insurance companies, and savings and loan associations. Over time, it gained widespread use throughout the investment community. Issues rated in our four highest categories—'AAA', 'AA', 'A', and 'BBB'—generally are recognized as investment grade. Debt rated 'BB' or below generally is considered "speculative grade." (The term "junk bond" is merely an irreverent expression for this category of more risky debt; "high-grade" and "high-yield" debt are common terms, as well.) Nomenclature aside, we take no view as to which securities are worthy of investment, because an investor with a particular risk preference may appropriately invest in securities that are not investment grade.

Standard & Poor's Ratings—And Their Role In The Financial Markets

Ratings continue as a factor in many regulations, both in the U.S. and abroad, notably in Europe and Japan. For example, the SEC requires investment-grade status in order to register debt on Form-3, which, in turn, is one way to offer debt via a Rule 415 shelf registration. The Federal Reserve Board allows members of the Federal Reserve System to invest in securities rated in the four highest categories, just as the Federal Home Loan Bank System permits federally chartered savings and loan associations to invest in corporate debt with those ratings, and the Department of Labor allows pension funds to invest in commercial paper rated in one of the three highest categories. In similar fashion, California regulates investments of municipalities and county treasurers; Illinois limits collateral acceptable for public deposits; and Vermont restricts investments of insurers and banks. The New York and Philadelphia stock exchanges fix margin requirements for mortgage securities depending on their ratings, and the securities haircut for commercial paper, debt securities, and preferred stock that determines net capital requirements is also a function of the ratings assigned.

Currency

We devised two types or ratings in order to comment on the risks associated with payment in currencies other than the entity's home country. Such payments typically are made outside the company's home country, so the risks encompass both transfer and convertibility.

- A local currency rating is our current opinion of an obligor's overall capacity to generate sufficient local currency resources to meet its financial obligations (both foreign and local currency), absent the risk of direct sovereign intervention that may constrain payment of foreign currency debt. Depending on the location of a company's operations, such intervention could relate to more than one government. Local currency credit ratings are provided on our global scale or on separate national scales, and may be either issuer or specific issue credit ratings. Country or economic risk considerations factored into local-currency ratings include the impact of government policies on the obligor's business and financial environment, including factors such as the exchange rate, interest rates, inflation, labor market conditions, taxation, regulation, and infrastructure. However, the opinion does not address transfer and other risks related to direct sovereign intervention to prevent the timely servicing of cross-border obligations.
- A foreign currency credit rating is our current opinion of an obligor's overall capacity to meet all financial obligations—including its foreign-currency-denominated financial obligations. It may take be either an issuer or an issue credit rating. As in the case of local currency credit ratings, a foreign currency credit opinion on our global scale is based on the obligor's individual credit characteristics, including the influence of country or economic risk factors. However, unlike local currency ratings, a foreign currency credit rating includes transfer and other risks related to sovereign actions that

Table 1 Cumulative Default Rates 1981–2006 (%)

Year	AAA	AA	A	BBB	BB	B	CCC/C
1	0.0	0.0	0.1	0.2	1.1	5.0	26.3
2	0.0	0.1	0.2	0.7	3.1	10.9	34.7
3	0.1	0.1	0.3	1.2	5.6	15.9	40.0
4	0.2	0.2	0.5	1.9	8.0	19.8	43.2
5	0.3	0.3	0.7	2.6	10.1	22.6	46.2
10	0.7	0.9	1.9	5.4	17.5	30.4	51.8
15	0.8	1.3	2.8	7.9	20.8	35.0	54.6

Source: S&P Annual 2006 Global Default Study.

may directly affect access to the foreign exchange needed for timely servicing of the rated obligation. Transfer and other direct sovereign risks addressed in such ratings include the likelihood of foreign-exchange controls and the imposition of other restrictions on the repayment of foreign debt.

(See Analytical Methodology/Country Risk section of this book for a discussion of the relationship of these ratings to ratings on the pertinent sovereign.)

National Scale Ratings

We produce national scale ratings in a number of countries across throughout the world. These ratings are expressed with the traditional letter symbols, but the rating definitions do not conform to those employed for the global scale. The rating definitions of each national scale and its correlation to global scale ratings are unique, so there is no basis for comparability across national scales.

CreditWatch Listings And Rating Outlooks

Our ratings evaluate default risk over the life of a debt issue, incorporating an assessment of all future events to the extent they are known or can be anticipated. But we also recognize the potential for future performance to differ from initial expectations. Rating outlooks and CreditWatch listings address this possibility by focusing on the scenarios that could result in a rating change. Ratings (both issuer and issue ratings) appear on CreditWatch when an event or deviation from an expected trend has occurred or is expected such that there is a significant chance (roughly 50% or more) of requiring a rating change, and additional information is necessary to take a rating action. For example, an issue is placed under such special surveillance as the result of mergers, recapitalizations, regulatory actions, or unanticipated operating developments.

We attempt to resolve CreditWatch reviews within 90 days, unless the outcome

of a specific event is still pending. A listing does not mean a rating change is inevitable; however, in some cases, it is certain that a rating change will occur, and only the magnitude of the change is unclear. In such situations, we immediately lower the corporate credit rating to the highest-conceivable outcome, or upgrade it to the lowest-conceivable outcome, while also listing the rating on CreditWatch for potential additional actions. In those instances—and generally, whenever possible—we comment on the range of alternative ratings. An issuer cannot automatically appeal a CreditWatch listing, but our analysts are sensitive to their concerns and the fairness of the process.

Rating changes also can occur without the issue appearing on CreditWatch beforehand. In fact, if all necessary information is available, ratings should immediately be changed to reflect the changed circumstances; there should be no delay merely to signal via a CreditWatch listing that a ratings change is to occur.

A rating outlook is assigned to all long-term debt issuers and assesses the potential for an issuer rating change. Outlooks have a longer time frame than CreditWatch listings—typically, two years for investment-grade entities, and one year for speculative-grade entities—and incorporate trends or risks with less certain implications for credit quality. (Ratings that are listed on CreditWatch, by definition, have no assigned outlook.)

A negative, developing, or positive outlook is not necessarily a precursor of a rating change or a CreditWatch listing. CreditWatch designations and outlooks may be positive, meaning the rating may be raised, or negative, meaning it may be lowered. Developing is used for those unusual situations in which future events are so unclear that the rating could be raised or lowered. A stable outlook is assigned when ratings likely will not be changed within the applicable timeframe, but it should not be confused with expected stability of the company's financial performance. ■

Our Rating Process

Most corporations approach us to request a rating prior to the sale or registration of a debt issue. That way, first-time issuers can receive an indication of what rating to expect. Issuers with rated debt outstanding also want to know in advance what affect issuing additional debt will have on the ratings we already have assigned. (As a matter of policy, in the U.S., we assign and publish ratings for all public corporate debt issues over \$100 million—with or without a request from the issuer. In these cases, we contact the issuer to elicit its cooperation.)

The analysts with the greatest relevant industry/country expertise are assigned to evaluate the credit and commence surveillance of the company. Our analysts generally concentrate on one or two industries, covering the entire spectrum of credits within those industries. Such specialization allows the analysts to accumulate expertise and competitive information better than if junk-bond issuers were followed separately from high-grade issuers. While one analyst takes the lead in following a given issuer and typically handles day-to-day contact, a team of experienced analysts—including a back-up analyst—is always assigned to the rating relationship with each issuer.

Meeting With Management

A meeting with corporate management is an integral part of our rating process. The purpose

is to review in detail the company's key operating and financial plans, management policies, and other credit factors that have an impact on the rating. Management meetings are critical in helping to reach a balanced assessment of a company's circumstances and prospects.

Participation

The company typically is represented by its chief financial officer. The chief executive officer usually participates when strategic issues are reviewed (usually the case at the initial rating assignment). Operating executives often present detailed information regarding business segments. Outside advisors may be helpful in preparing an effective presentation. We neither encourage nor discourage their use: It is entirely up to management whether advisors assist in the preparation for meetings, and whether they attend the meetings.

Scheduling

Management meetings usually are scheduled at least several weeks in advance, to assure mutual availability of the appropriate participants and to allow adequate preparation time for our analysts. In addition, if a rating is being sought for a pending issuance, it is to the issuer's advantage to allow about three weeks following a meeting for us to complete the review process. More time may be needed in certain cases, if, for example, extensive review of documentation is necessary. However, where special circumstances exist and a quick turnaround is needed, we endeavor to meet the requirements of the marketplace.

Facility Tours

Touring major facilities can be very helpful for us to understand a company's business. However, it generally is not critical in assigning a rating to a given company. Considering the time constraints that typically arise in the initial rating exercise, arranging facility tours may not be feasible. As discussed below, such tours may well be a useful part of the subsequent surveillance process.

Preparing For Meetings

Corporate management should feel free to contact its designated Standard & Poor's credit analyst for guidance in advance of the meeting regarding the particular areas that will be emphasized in the analytic process. Published ratings criteria, as well as industry commentary and articles on peer companies, may also help management appreciate the analytic perspective.

Providing detailed, written lists of questions tends to constrain spontaneity and artificially limit the scope of the meeting. Therefore, some of our practices prefer not to do so, while other practices endeavor in other ways to avoid such outcomes.

We request that the company submit background materials well in advance of the meeting, (ideally, several sets), including:

- five years of audited annual financial statements;
- the last several interim financial statements;
- narrative descriptions of operations and products; and

- if available, a draft registration statement or offering memorandum, or equivalent.

Apart from company-specific material, relevant industry information also is useful. While not mandatory, written presentations by management often help provide a framework for the discussion. Such presentations typically mirror the format of the meeting discussion, as outlined below. Where a written presentation is prepared, it is particularly useful for our team to review it in advance of the meeting.

There is no need to try to anticipate all questions that might arise. If additional information is necessary to clarify specific points, it can be provided subsequent to the meeting. In any case, our credit analysts generally will have follow-up questions that arise as the information covered at the management meeting is further analyzed.

Confidentiality

A substantial portion of the information set forth in company presentations is highly sensitive and is provided by the issuer to us solely for the purpose of arriving at ratings. Such information is kept strictly confidential by the ratings group, on a need-to-know basis. (Obviously, if information is known to us or comes to be known from other sources, the company cannot expect us to treat this information confidentially.) It is not to be used for any other purpose, nor by any third party, including other Standard & Poor's units. Standard & Poor's maintains a "Chinese Wall" between its rating activities and its equity information services. Even if a public rating is subsequently assigned, any rationales or other information we publish about the company will refer only to publicly available corporate information. In the same vein, if we change a rating or outlook based on confidential information received, we will take pains to avoid disclosing that information in our published materials.

Conduct Of Meeting

In a typical meeting with issuer management, we typically address:

- industry environment and prospects;

Our Rating Process

- an overview of major business segments, including operating statistics and comparisons with competitors and industry norms;
- financial policies and financial performance goals;
- distinctive accounting practices;
- projections, including income and cash flow statements and balance sheets, together with the underlying market and operating assumptions;
- capital spending plans; and
- financing alternatives and contingency plans.

It should be understood that our ratings are not based on the issuer's financial projections or management's view of what the future may hold. Rather, ratings are based on our assessment of the company's prospects. However, management's financial projections are a valuable tool in the rating process, because they indicate management's plans, how management assesses the company's challenges, and how it intends to deal with problems. Projections also depict the company's financial strategy in terms of anticipated reliance on internal cash flow or outside funds, and they help articulate management's financial objectives and policies.

Management meetings with companies new to the rating process typically last two to four hours, or longer if the company's operations are particularly complex. If the issuer is domiciled in a country new to ratings or participates in a new industry, more time is usually required. When, in addition, there are major accounting issues to be covered, meetings can last a full day or two.

Short, formal presentations by management are useful to introduce areas for discussion. We prefer meetings to be interactive and largely informal, with ample time allowed for questions and responses. (At management meetings, as at all other times, we welcome the company's questions regarding our procedures, methodology, and analytical criteria.)

Rating Committee

A committee is always convened to assign a new issuer rating. Rating committees normally consist of five to seven voting members, and a chairperson reviews the suitability of the committee participants.

A presentation is made by the lead analyst to the rating committee, which has been provided in advance with appropriate financial statistics and comparative analysis. The presentation follows the methodology as outlined in the methodology section below. It includes analysis of the company's business and its operating environment, evaluation of its strategic and financial management, accounting aspects, and financial analysis. When rating a specific issue, there is additional discussion of the proposed issue and terms of the indenture.

Once the ratings are determined, the company is notified, and told of the major supporting considerations. We allow the issuer to respond to the rating decision prior to its publication by presenting new or additional data. We entertain appeals in the interest of having available the most information possible and, thereby, the most accurate ratings. In the case of a decision to change an extant rating, any appeal must be conducted as expeditiously as possible, i.e., within a day or two. The committee reconvenes to consider the new information.

After notifying the company, the rating is disseminated via the media, or released to the company for dissemination in the case of private placements or corporate credit ratings.

To maintain the integrity and objectivity of our rating process, our internal deliberations and the identities of those who sat on a rating committee are kept confidential, and not disclosed to the issuer.

Surveillance

Corporate ratings on publicly distributed issues are monitored for at least one year. The company can then elect to pay us to continue surveillance. Ratings assigned at the company's request have the option of surveillance, or being on a "point-in-time" basis.

Surveillance is performed by the same industry analysts that work on the assignment of the ratings. In fact, we strive to provide continuity of the lead analyst and a portion of the relevant rating committee (some members do rotate, though, to allow for fresh perspectives, and the lead analyst role must rotate after five years). To facilitate

surveillance, companies put the lead analyst on mailing lists to receive interim and annual financial statements, press releases, and bank documents, including compliance certificates. The lead analyst is in periodic contact with the company to discuss ongoing performance and developments. Where these vary significantly from expectations, or where a major, new financing transaction is planned, an update management meeting is appropriate. We also encourage companies to discuss hypothetically—again, in strict confidence—transactions that perhaps are only being contemplated (e.g., acquisitions, new financings), and, where practicable, we endeavor to provide frank feedback about the potential ratings implications of such transactions.

In any event, management meetings routinely are scheduled at least annually. These meetings enable analysts to keep abreast of management's view of current developments, discuss business units that have performed differently from original expectations, and be apprised of changes in plans. As with initial management meetings, we willingly provide guidance in advance regarding areas we believe warrant emphasis: There generally is no need to dwell on basic information covered at the initial meeting. Apart from discussing revised projections, it is helpful to revisit the prior projections and to discuss how actual performance varied, and why.

A significant proportion of meetings with company officials takes place on the company's premises. There are several reasons: to facilitate increased exposure to management personnel—particularly at the operating level; obtain a first-hand view of critical facilities; and achieve a better understanding of the company by spending more time reviewing the business units in depth. While we actively encourage meetings on company premises, time and scheduling constraints on both sides dictate that arrangements for these meetings be made some time in advance.

Because the staff is organized by specialty, credit analysts typically meet each year with most major companies in their assigned area to discuss the industry outlook, business strategy, and financial forecasts and policies. This way, competitors' forecasts of market demand can be compared with one

another, and we can assess implications of competitors' strategies for the entire industry. Our analysts can judge management's relative optimism regarding market growth and relative aggressiveness in approaching the marketplace.

Importantly, the analyst compares business strategies and financial plans over time and seeks to understand how and why they changed. This exercise provides insights regarding management's abilities with respect to forecasting and implementing plans. By meeting with different managements over the course of a year, and the same management year after year, analysts can distinguish between managements with thoughtful, realistic agendas and those with wishful approaches.

Management credibility is achieved to the extent the record demonstrates that a company's actions are consistent with its plans and objectives. Once earned, credibility helps support continuity of a particular rating level, because we can rely on management to do what it says to maintain and/or restore creditworthiness when faced with financial stress or strategic challenge. Once lost, credibility is difficult to restore. The rating process benefits from the unique perspective on credibility gained by extensive evaluation of management plans and financial forecasts over many years.

Rating Changes

As a result of the surveillance process, it sometimes becomes apparent that changing conditions require reconsideration of the outstanding rating. When this occurs, the analyst undertakes a preliminary review, which, after internal deliberation, may lead to a CreditWatch listing. This is followed by a comprehensive analysis, communication with management, and a presentation to the rating committee. The rating committee evaluates the matter, arrives at a rating decision, and notifies the company—after which we publish the rating changes, if any, and the new outlook. The process is exactly the same as the rating of a new issue. Reflecting this surveillance, the timing of rating changes depends neither on the sale of new debt issues nor on our internal schedule for reviews. ■

Analytical Methodology

Our rating methodology is based on fundamental analysis. Our model has evolved over time to reflect greater complexity and volatility facing companies. Current ratings analysis puts much greater emphasis on cash flow adequacy and liquidity than in the past. Our profitability analysis was part of our financial risk review, but we now emphasize its role as part of our business risk and competitive assessment.

Overview

Over the past five or six years, we have paid significantly more attention to accounting considerations and corporate governance. While management's risk orientation has always been a critical part of our rating decisions, there is a more complex corporate landscape now—including the availability of ever more complicated securities and transactions. Accordingly, we need to drill deeper into management practices and policies, including a range of issues, from ownership to board independence to off-balance sheet stratagems.

Business risk/financial risk matrix

We strive for transparency around the rating process. However, it is critical to realize—and it should be apparent—that the ratings process cannot be reduced to a cookbook approach: Ratings incorporate many subjective judgments, and remain as much an art as a science.

Our corporate analytical methodology organizes the analytical process according to a common framework, and it divides the task

into several categories so that all salient issues are considered. The first categories involve fundamental business analysis; the financial analysis categories follow. (Credit ratings often are identified with financial analysis—especially ratios. And we publish ratio statistics and benchmarks both for sectors and individual companies. But ratings analysis starts with the assessment of the business and competitive profile of the company. Two companies with identical financial metrics are rated very differently, to the extent that their business challenges and prospects differ.)

We developed the matrix in table 2 to make explicit the rating outcomes that are typical for various business risk/financial risk combinations. The table illustrates the relationship of business and financial risk profiles to the issuer credit rating. The following illustrates how the tables can be used to better understand our rating conclusions.

The hypothetical case of company ABC
Company ABC is deemed to have a satisfactory business risk profile, typical of a low

investment-grade industrial issuer. If its financial risk were “intermediate”, the expected rating outcome should be ‘BBB’.

ABC’s ratios of cash flow to debt (35%) and debt leverage (total debt to EBITDA of 2.5x) are indeed characteristic of intermediate financial risk. (The assessment of financial risk really is not so simple: It encompasses financial policies and risk tolerance, volatility and risks to future performance, several perspectives on cash flow adequacy—including free cash flow and the degree of flexibility regarding capital expenditures, and various measures of liquidity—including coverage of short-term maturities.)

Company ABC can aspire to an upgrade to the ‘A’ category by reducing its debt burden to the point that cash flow to debt is more than 60% and debt leverage is only 1.5x. Conversely, ABC may choose to become more financially aggressive—perhaps it decides to reward shareholders by borrowing to repurchase its stock. The company can expect to be rated in the ‘BB’ category if its cash flow to debt ratio is 20% and debt leverage remains at 4x—and there is a commitment to keeping its finances at these levels.

The rating matrix is a guideline, not written in stone

The rating matrix is not meant to be precise. There can always be small positives and negatives that would lead to a notch higher or lower than the typical outcome.

Moreover, there will always be exceptions—cases that do not fit neatly into this analytical framework. For example, liquidity concerns or litigation could pose overarching risks. Also, the matrix does not address the lowest rungs of the credit spectrum (i.e., the ‘CCC’ category and lower). These ratings, by definition, reflect some impending crisis or extraordinary vulnerability, and the balanced approach that underlies the matrix framework just does not lend itself to such situations.

Corporate Credit Analysis Categories

The categories underlying our business and financial risk assessments are:

Business Risk

- Country risk
- Industry factors
- Competitive position
- Profitability/Peer group comparisons

Table 2 Business Risk/Financial Risk

—Financial risk profile—					
Business risk profile	Minimal	Modest	Intermediate	Aggressive	Highly Leveraged
Excellent	AAA	AA	A	BBB	BB
Strong	AA	A	A-	BBB-	BB-
Satisfactory	A	BBB+	BBB	BB+	B+
Weak	BBB	BBB-	BB+	BB-	B
Vulnerable	BB	B+	B+	B	B-
Financial risk indicative ratios*	Minimal	Modest	Intermediate	Aggressive	Highly Leveraged
Cash flow (Funds from operations/Debt) (%)	Over 60	45–60	30–45	15–30	Below 15
Debt leverage (Total debt/Capital) (%)	Below 25	25–35	35–45	45–55	Over 55
Debt/EBITDA (x)	<1.4	1.4–2.0	2.0–3.0	3.0–4.5	>4.5

*Fully adjusted, historically demonstrated, and expected to continue consistently.

Analytical Methodology

Financial risk

- Governance/Risk tolerance/Financial policies
- Accounting
- Cash flow adequacy
- Capital structure/Asset protection
- Liquidity/Short-term factors

Note that we do not have any predetermined weights for these categories. The significance of specific factors varies from situation to situation.

Business risk considerations

Country risk. The operating environment in the particular country—including, importantly, any sovereign-related stress—can have an overwhelming impact upon company creditworthiness, both direct and indirect. Sovereign credit ratings suggest general risk faced by local entities, but they may not fully capture risk applicable to the private sector. As a result, when rating corporate or infrastructure companies or projects, we look beyond the sovereign ratings to evaluate the specific economic or country risk that may impact the entity's creditworthiness. Such economic or country risk pertains to the impact of government policies upon the obligor's business and financial environment, and a company's ability to insulate itself from these risks.

Industry factors. All rating analyses incorporate an assessment of the company's business environment. The degree of operating risk facing a company almost always depends on the dynamics of the industry in which it participates. Our industry analysis focuses on the strength of industry prospects, as well as the competitive factors affecting that industry.

The many factors assessed include industry prospects for growth, stability, or decline, and the pattern of business cycles. It is critical, for example, to determine vulnerability to technological change, labor unrest, regulatory interference, or changes in the supply/demand balance. Our knowledge of the investment plans of the major players in a given industry offers a unique vantage point with respect to the future industry's profile.

The industry risk assessment sets the stage for analyzing specific company risk factors/keys to success and establishing the priority of these factors in the overall evalua-

tion. For example, if technology is a critical competitive factor, R&D prowess is stressed. If the industry produces a commodity, cost of production is of major importance.

Still, for any particular company, one or more factors can hold special significance, even if that factor is not common to the industry. For example, the fact that a company has only one major production facility normally is regarded as an area of vulnerability. Similarly, reliance on one product creates risk, even if the product is highly successful (e.g., a pharmaceutical company with only one blockbuster drug that is subject to competition and patent expiration).

Competitive position. Competitive position represents a critical input in assessing a company's level of business risk in our analysis, and can often have a significant impact on the debt rating for an issuer. To determine a given issuer's competitive position, we look at key factors pertinent to the specific industry. A key factor for a pharmaceutical company, for example, might be research and development, whereas marketing would be a particularly important consideration for a consumer products company.

Company size and diversification often plays role. While we have no minimum size criterion for any given rating level, company size tends to be significantly correlated to rating levels. This is because larger companies often benefit from economies of scale and/or diversification, translating into a stronger competitive position. Small companies are, almost by definition, more concentrated in terms of product, number of customers, and geography. To the extent that markets and regional economies change, a broader scope of business affords protection.

Small companies are sometimes touted for their greater growth potential. However, fast growth often is subject to poor execution (even if the idea is well conceived) and can also tempt a company into over-ambitiousness, which could involve added risk.

Management evaluation. Management is assessed for its role in determining operational success and also for its risk tolerance. The first aspect is incorporated in the business risk

analysis; the second is weighed as a financial policy factor.

Subjective judgments help determine each aspect of management evaluation. Opinions formed during the meetings with senior management are as important as management's track record. While a track record may seem to offer a more objective basis for evaluation, it often is difficult to determine how results should be attributed to management's skills.

Management plans and policies are judged for their realism. How they are implemented determines the view of management consistency and credibility. Stated policies often are not followed, and a rating may reflect skepticism until management has established credibility. Credibility can become a critical issue when a company is faced with stress or restructuring, and we must decide whether to rely on management to carry out plans for restoring creditworthiness.

Profitability/Peer group comparisons.

Profit potential is a critical determinant of credit protection. A company that generates higher operating margins and returns on capital has a greater ability to generate equity capital internally, attract capital externally, and withstand business adversity. Earnings power ultimately attests to the value of the company's assets, as well.

Moreover, conclusions about profitability also serve as a good sanity check on our assessment of business risk: A company's profit performance offers a litmus test of its fundamental health and competitive position. In this regard, comparing peer companies on key profit metrics is most meaningful.

Financial risk considerations

Having evaluated the issuer's operating environment and competitive position, the analysis proceeds to several financial categories. To reiterate, the company's business risk profile determines the level of financial risk appropriate for any rating category. Financial risk is portrayed largely through quantitative means, particularly by using financial ratios. Several analytical adjustments typically are required to calculate ratios for an individual company (see *Encyclopedia of Analytical Adjustments*, below). Cross-border comparisons require additional care, given the differ-

ences in accounting conventions and local financial systems.

Financial policy. We attach great importance to management's philosophies and policies involving financial risk. A surprising number of companies have not given this question serious thought, much less reached strong conclusions. For many others, debt leverage (calculated without any adjustment to reported figures) is the only focal point of such policy considerations. More sophisticated business managers have thoughtful policies that recognize cash flow parameters, the interplay between business and financial risk, and the need to adjust financial data to reflect different needs and perspectives.

Even those companies that have set goals may not have the wherewithal, discipline, or management commitment to achieve these objectives. Leverage goals, for example, need to be viewed in the context of an issuer's past record and the financial dynamics affecting the business.

Accounting characteristics and information risk. Financial statements and related disclosures serve as our primary source of information regarding the financial condition and financial performance of industrial and utility companies. The analysis of financial statements begins with a review of accounting characteristics. The purpose is to determine whether ratios and statistics derived from the statements can be used appropriately to measure a company's performance and position relative to both its direct peer group and the larger universe of corporate issuers. The rating process is, in part, one of comparisons, so it is important to have a common frame of reference.

Analytical adjustments are made to better portray reality and to level the differences among companies—although it rarely is possible to completely recast a company's financial statements. Even where the ability to adjust is limited, it is important to at least have some notion of the extent to which different financial measures are overstated or understated.

Apart from their importance to the quantitative aspects of the analysis, conclusions regarding accounting characteristics and financial transparency can also influence

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qualitative aspects of the analysis, such as the assessment of management.

Cash flow adequacy. Interest or principal payments cannot be serviced out of earnings, which is just an accounting concept; payment has to be made with cash. Although there usually is a strong relationship between cash flow and profitability, many transactions and accounting entries affect one and not the other. Analysis of cash flow patterns can reveal a level of debt-servicing capability that is either stronger or weaker than might be apparent from earnings.

The analysis often focuses on levels of funds from operations (FFO), but we pay close attention to working capital swings, capital spending requirements, and shareholder distributions to complete the picture with respect to cash flow adequacy.

Cash flow analysis is usually the single most critical aspect of credit rating decisions. It takes on added importance for speculative-grade issuers. While companies with investment-grade ratings generally have ready access to external financing to cover temporary cash shortfalls, speculative-grade issuers lack this degree of flexibility and have fewer alternatives to internally generated cash for servicing debt.

Capital structure and asset protection. A review of an issuer's capital structure represents an important part of our financial review. The review encompasses both the level and mix of debt employed (i.e., fixed/variable rate, maturity, currency, secured/unsecured). This analysis helps us determine a company's financial flexibility, and how leveraged it is. Of course, when we look at leverage, our analysis goes beyond reported debt on the balance sheet and includes such items as leases, pension and retiree medical liabilities, guarantees, and contingent liabilities.

In addition, a company's asset mix is a critical determinant of the appropriate leverage for a given level of risk. Assets with stable cash flows or market values justify greater use of debt financing than those with clouded marketability. Accordingly, we believe it is critical to analyze each type of business and asset class in its own right. While the Financial Accounting Standards Board (FASB) and International Accounting

Standards (IAS) now require consolidation of nonhomogenous business units, we analyze each separately.

Liquidity/short-term factors. Sundry considerations that do not fit in other categories are examined here. The potential impact of contingencies is considered, along with the company's contingency plans. These include serious legal problems, lack of insurance coverage, or restrictive covenants in loan agreements that place the company at the mercy of its bankers. Access to various capital markets, affiliations with other entities, and the ability to sell assets are important factors in determining a company's options under stress.

Debt maturity schedules are scrutinized. Flexibility can be jeopardized when an issuer is overly reliant on bank borrowings or commercial paper. Issuing commercial paper without adequate backup facilities is a big negative.

As going concerns, companies should not be expected to repay debt by liquidating operations. Clearly, there is little benefit in selling natural resource properties or manufacturing facilities if they must be replaced in a few years. Nonetheless, the ability to generate cash through asset disposals enhances a company's financial flexibility.

Country Risk

Country risk—the risk of doing business in a particular country—is a critical component of many ratings, particularly for companies in emerging markets. The large number of corporate defaults in Argentina during the 2001-2002 crisis was related to a combination of macroeconomic factors, such as severe currency depreciation and weak economic activity, and government actions such as the 'pesification' (conversion to pesos from foreign currency) of financial obligations, utility tariffs, and most other dollar-denominated contracts at an unfavorable exchange rate from a creditor's perspective.

Country risk differs from sovereign credit risk—the risk of the sovereign defaulting on its commercial debt obligations. Country risk is often correlated with sovereign creditworthiness, but not always.

Depending on the industry sector or individual company's financial strength, a company may be better or less able to withstand macroeconomic shocks or other country-related risks. For instance, several—but not all—Brazilian exporters performed well during 2002 despite a severe credit crunch in the marketplace, given government reluctance to interfere with export financing. Commercial banks and state development banks continued to provide lines of credit to major exporters, even though the sovereign suffered credit stress. Most Russian companies continued to perform and to service external, export-backed debt in 1998-1999 when the sovereign was in default.

On the other hand, strengthening credit quality of the sovereign state does not necessarily improve the business environment—or the relevant country risk. For example, while Russia's sovereign credit quality has been improving, the operating environment remains risky. All ratings on Russian companies factor in uncertainty about enforcement of regulatory and legal norms and the still-weak corporate governance environment.

Certain industries tend to be more affected by sovereign issues than others. Banks and utilities are greatly affected by the regulatory framework and by the general condition of the economy. On the opposite end of the spectrum are export-oriented companies, which are less affected by local economic conditions, and generally benefit from currency depreciation. Nevertheless, even exporters are exposed to country risk. For instance, they are subject to local rules on labor and domestic input sourcing, and could suffer a disruption in financial market access because of sovereign-related investor perceptions. Resource nationalism can also make export-oriented commodity industries more likely targets of selective sovereign intervention.

Exposure to country risk may even differ on a company-by-company basis. For instance, in Russia, the large oil and gas producers may each be subject to different risks of government interference.

Government-related companies generally enjoy some government support, but face general country risks as well. While selective sovereign intervention is hardly an issue for them, in terms of outright expropriation,

they are still subject to the country's tax and regulatory risks, infrastructure constraints, or exchange rate movements. There are plenty of examples in which the sovereign has induced the government-owned entities to reduce capital investment budgets, increase the tax burden, or pay extraordinary dividends when economic pressures have risen.

Country risk methodology and interaction with the sovereign rating
The main sovereign and industry-related risks affecting and sometimes constraining the credit quality of companies in a certain jurisdiction include various economic, financial, regulatory, and industry-related risks that can affect day-to-day operations, long-term investment decisions, and, of course, payment capacity.

We divide the main country risk factors that could affect the private sector into two categories: *Economic/political* and *industry* risks.

Economic risks:

- growth prospects of a country;
- its business cycle;
- political factors influencing the business environment;
- current and projected inflation levels;
- foreign exchange risks affecting the flow of imports, exports, and the balance of payments;
- the payment system and the strength and depth of the banking system;
- interest rates and spreads;
- the depth and liquidity of the local capital markets; and
- access to the cross-border markets for commercial or financial transactions.

Industry-related risks:

- labor market constraints or incentives;
- the strength and political direction of labor unions;
- labor cost and strike experience;
- condition of general infrastructure in the country—with potential constraints on water supply, cost of electricity, and price and availability of oil and gas;
- poor transportation services in roads, ports, and airports;
- accounting and reporting transparency in the country;

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- federal and state government legal systems;
- regulatory risk for utilities, banks, and other entities under regulation;
- existence or potential for heavy taxation; and
- corruption-related risks affecting day-to-day operations.

Past experience

The main country risk factors that have affected financial performance and caused corporate defaults in the past are the following:

- Currency mismatch on operations and financial obligations combined with sharp local currency depreciation;
- Price controls combined with drastic raw material increases;
- Sudden contraction of liquidity, combined with a general weakening of the financial system and a possible freezing of bank deposits;
- Large increases in the cost of funds by financial intermediaries, if available;
- Delayed payments from domestic customers, including sovereigns themselves or sovereign-owned entities;
- Hikes in export tariffs or taxes;
- Prolonged labor strikes with excessive demands;
- Unfriendly change in regulations;
- GDP contraction and reduced domestic demand for several months or years;
- Sovereign restrictions on access to foreign exchange needed for debt service; and
- Forced conversion of foreign currency-denominated obligations into local currency.

Ratings above the sovereign

Under our methodology, ratings on a company may exceed those on the sovereign, if we expect it would continue to perform and fulfill its financial obligations, even during a sovereign local and/or foreign currency default scenario. The company must demonstrate that it is significantly sheltered from sovereign and country risk factors, based on past experience and probable scenarios. Where such potential exists, we would perform additional sovereign and country risk stress scenarios as part of the rating analysis.

In addition, ratings above those on the sovereign are possible where there is strong

implicit or explicit support from a highly-rated parent in another jurisdiction, and/or there is significant cash-flow diversity derived from operations in several countries.

Foreign currency ratings of an entity would be usually capped by the transfer and convertibility (T&C) assessment for a given country—ordinarily, higher than the sovereign foreign-currency rating. (See *"Ratings Above The Sovereign: Foreign Currency Rating Criteria Update,"* published Nov. 3, 2005, on RatingsDirect, the real time Web-based source for Standard & Poor's credit ratings, research, and risk analysis.

Assessments of T&C risk are published on a monthly basis for all rated sovereigns.)

Nevertheless, a company's foreign currency ratings can exceed the T&C assessment in instances of: very strong credit metrics and business prospects, as projected even through a sovereign default scenario; strong incentives to service foreign debt (links to global trading system); or a projected ability to generate enough foreign currency cash flow to comfortably cover foreign currency outflows.

As of 2007, the foreign currency ratings of 68 entities in 21 countries exceeded the sovereign rating of the country of domicile. (See *"Transfer And Convertibility Assessment History Since November 2005"* published June 7, 2007, on RatingsDirect.) Only a handful, however, exceeded the T&C assessment.

Industry Risk

Industry risk analysis sets the stage for company-specific analysis. The goal is to develop a robust understanding of the company's external business and operating environment. Industry analysis focuses on the industry prospects, as well as identifying the competitive factors, risks, and challenges affecting participants in that industry. Once key industry and country risk considerations are identified, the credit analysis process proceeds to a second phase—company-specific analysis.

Industry characteristics—and the mix of opportunities and risks they represent—include the sector's growth and profit potential, degree of cyclicity, ease of entry, nature and degree of competition, capital intensity,

operational and cost structure, regulation, and technology. Companies best-positioned to take advantage of these key industry drivers—or to mitigate associated risks more effectively, possess a competitive advantage—and a stronger business risk profile.

Evaluating an industry's risk profile

While characteristics pertinent to credit risk across industries broadly are similar, the impact of these factors can vary significantly between industries. Table 3 highlights how a common set of industry characteristics/metrics can be applied to identifying the relative credit impact of key industry factors across some major industries in the U.S.

Some industries are more highly affected by national factors than others. The nature and impact of key characteristics can vary markedly between countries for a given industry. Utilities, telecom, and retail tend to be more affected by national characteristics. By contrast, oil & gas, chemicals, and technology sectors are more global in nature, as national factors tend to be less influential.

An example of country-specific influences: Telecom

While the telecom industry recently has been a primary driver of globalization, and the technology platforms and connectivity provided by

telecommunication companies form the underpinnings of the global network for voice, data video, and Internet services, it does not have a uniform global credit profile. A few leading operators have diversified internationally by building networks in multiple regions and countries, although none can be said to be global. A major impediment to the creation of truly global players is that many governments view the industry as being of national strategic importance; so, as in the case of utilities, barriers to cross border/global expansion and diversification often are material. The high cost of cross-border entry includes availability and expense of government-sanctioned frequencies and licenses, network-construction capital expense, and, in emerging markets, often the requirement to share profits and management decisions with local partners. The degree of competition in telecom is in many countries a direct function of government policy and regulation, as well as other factors, such as population and business density. National markets with the higher telecom credit risk tend to be those with a high degree of competition, where growth prospects are limited by market maturity, and government and regulatory policy or actions have spurred competition, and historically been inconsistent: The U.K. is an example of one such market. Conversely, in markets with lower levels of competition

Table 3 Key Industry Characteristics And Drivers Of Credit Risk

Credit risk impact: High (H); Medium (M); Low (L)

Risk factor	Cyclicality	Competition	Capital intensity	Technology risk	Regulatory/government	Energy sensitivity
Industry	H	H	H	L	M/H	H
Airlines (U.S.)	H	H	H	M	M	H
Autos*	H	H	H	M	M	M
Auto suppliers*	H	H	M	H	L	L/M
High technology*	H	H	H	M	M/H	H
Mining*	H	H	H	L	M	L
Chemicals (bulk)*	H	H	H	L	M	H
Hotels*	H	H	H	L	L	M
Shipping*	H	H	H	L	L	M
Competitive power*	H	H	M	L	H	H
Telecoms (Europe)	M	H	H	H	H	L

*Global.

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(often because of government policies and regulations that aim to support price levels and profit margins, and create surplus cash generation to fund infrastructure spending by incumbents), and growth prospects are high, the sector credit-risk profile can be much more favorable. A prime example of the latter market is China. Key ratings metrics, such as operating margins, EBITDA coverage, and leverage ratios for China's dominant incumbent wireline and wireless companies reflect this advantage, and are among the strongest of any rated telecom. However, in the case of China, our ratings on these companies are constrained by sovereign/country-risk considerations. Markets where competition is limited by government policy are obviously susceptible over time to policy changes leading to greater market liberalization. While the possibility of a major policy U-turn in China currently appears low, it is essential that any likelihood of changes that would foster greater competition be factored into the analysis in markets where there is a high degree of government protection.

High-risk industries

Certain sectors historically have experienced higher default rates and downward transition behavior. This can be linked to key high-risk industry characteristics. Ratings within such industries tend to cluster, because competitive differentiation is often hard to achieve and financing needs are relatively similar.

Still, it is critical not to paint an entire industry with the same brush. In fact, the stress of many companies in a particular industry can result from the superior execution and performance of their rivals. Such competitive divergence should be mirrored in a bifurcated ratings profile for that industry.

Factors with a high level of impact on credit risk are cyclical, degree of competition, capital intensity, technological risk, regulation/deregulation, and energy cost sensitivity.

Mature industries that are very competitive often have long-established companies with inflexible/legacy cost structures (arising from labor, pension, and/or environmental issues, among others). Industries in this category include autos, airlines, and integrated steel.

Cyclical

Industry cycles result not only from fluctuating demand, but, importantly, also from swings in supply capacity. (Such addition of new capacity often occurs in response to cyclical upswings in demand.) Overbuilding of production capacity exacerbates competitive and earnings pressure, especially in the event of a downturn in demand (examples of this dynamic: bulk chemicals and shipping).

A company's business can be so impaired during a downturn that it runs out of funds—or its competitive position may be permanently altered. In the extreme, a company will not survive a cyclical downturn to participate in the upturn. So, all else equal, companies subject to cyclical are rated lower than non-cyclical companies.

We attempt to avoid assigning high ratings to a company at its peak of cyclical prosperity, if that performance level is expected to be only temporary. Similarly, we may not lower ratings to reflect weakening performance because of cyclical factors, if the downturn is likely to be only temporary or there are good prospects for management to respond to the changed circumstances.

It is not that ratings are not adjusted with the phases of a cycle: Rather, the range of the ratings would not fully mirror the amplitude of the company's cyclical highs or lows, given the expectation that a cyclical pattern will persist. The expectation of change from the current performance level—for better or worse—tempers any rating action.

We do not—and cannot—aim to “rate through the cycle” entirely. Rating through the cycle requires an ability to predict the cyclical pattern—usually extremely difficult to do. The phases of a cycle probably will be longer or shorter, or steeper or less severe, than just repetitions of earlier cycles.

Interaction of cycles from different parts of the globe and the convergence of secular and cyclical forces are further complications.

Moreover, even predictable cycles can affect individual companies in ways that have a lasting impact on credit quality. As noted, a company may fail during the cyclical downturn. Conversely, a company may accumulate enough cash in the upturn to mitigate the risks of the next downturn.

Furthermore, investor sentiment about cyclical credits may fluctuate over the course of a cycle, with important ramifications for financial flexibility. Whatever our own views about the long-term staying power of a given company, the degree of public confidence in the company's financial viability determines its access to capital markets, bank credit, and even trade credit—for better or worse. Accordingly, the psychology and the perceptions of capital providers must be taken into account.

Sensitivity to cyclical factors—and ratings stability—also varies considerably along the rating spectrum. As the credit quality of a company becomes increasingly marginal, the nature and timing of near-term changes in market conditions are more likely to mean the difference between survival and failure. A cyclical downturn may involve the threat of default before the opportunity to participate in the upturn that may follow. In such situations, cyclical fluctuations usually will lead directly to rating changes—possibly even several rating changes in a relatively short period. Conversely, a cyclical upturn may give companies a breather that may warrant a modest upgrade or two from those very low levels.

In contrast, companies viewed as having strong fundamentals (i.e., those enjoying investment-grade ratings) are unlikely to see significant rating changes because of factors deemed to be cyclical, unless the cycle is either substantially different from that expected, or the company's performance is somehow exceptional relative to that expected.

(Rating stability for a company throughout a cycle also presumes consistency in business strategy and financial policy. In reality, management psychology is often strongly influenced by the course of a cycle. For example, in the midst of a prolonged, highly favorable cyclical rebound, a given management's resolve to pursue a conservative growth strategy and financial policy may be weakened. Shifts in management psychology may affect not just individual companies, but entire industries. Favorable market conditions may spur industry-wide acquisition activity or capacity expansion.)

Capital intensity

To the degree that a business is capital intensive, return/break-even horizons are often further out, because of the need to invest heavily in fixed assets/production capacity. Operating leverage/capacity utilization adds to the risk profile.

Sectors that are both capital intensive and have a high degree of competition (e.g., autos, shipping, forest products, and metals & mining) are especially sensitive to the need for high capacity utilization. Nonetheless, capital-intensive sectors often have a high propensity to over-expand capacity in growth periods, leading to surplus capacity, intense price competition, and eroding margins. Perhaps ironically, such companies also tend to have above-average financial risk, as financing needs often are substantial and long.

Rapid change

Industries undergoing rapid change because of technological innovation and/or deregulation tend to have higher levels of industry risk. Barriers to entry can be substantially reduced, allowing an entry to new competitors that may not be burdened by legacy business models, technologies, and the cost structures of incumbents.

There is greater potential for industry peers sorting themselves into winners and losers—as companies pursue different business models/strategies. The quality of management is particularly important in such industries.

Risks in maturing or declining industries

Maturing economic and demographic environment can lead to market saturation (e.g., anemic growth rates in Western Europe and Japan for autos and steel). Technological change may spur substitution (fixed-wireline phones by mobile/wireless; traditional media advertising by Internet ads; pharmaceutical medications by bio-medications; and print media/news by Internet news services). New business models can lead to disintermediation (local retailers by mega retailers, and traditional airlines by low-cost carriers).

Stagnant or declining revenues require cost-reduction to maintain profitability. Product differentiation also tends to be difficult in maturing industry environments, as there is a

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high degree of correlation between industry maturity and product commoditization (brands do afford companies protection from commoditization in some sectors). Industry consolidation often is challenging—both for the companies making the acquisitions—and those left to compete with them.

Risks in rapidly growing, immature industries

The promise of new technologies and new business models—while a threat to the existing companies—is not a panacea for the innovators either (e.g., Internet and dot.com companies). High-growth industries, particularly those driven by technological change, tend to have long investment breakeven horizons, especially if they are capital intensive. Their early periods are associated with losses and negative cash flow.

Unproven commercial viability of a new technology and/or business model also make them poor candidates for obtaining credit. New industries normally are funded in their early phases through venture capital (e.g., biotechnology).

Some high-technology/high-growth industries are viewed as having economic and political importance to national governments, which may protect them from market competition in an attempt to stimulate their development (as noted with China's telecoms). Barriers to entry erected by governments in the form of licensing, franchise auctioning, and laws barring competition and acquisition by nonsanctioned entities are used to provide a protected environment. However, as these industries mature, governments open them up to varying degrees of competition by allowing new entrants or removing monopolistic privileges incumbents had previously enjoyed. Once deregulated, such industries normally become much riskier from a credit perspective, because increased competition erodes industry profit margins.

"Old" industries can become rejuvenated in emerging markets

Not all industry high-growth opportunities are created by new technology or business models. Currently, the rapid industrialization of developing countries (notably China and

India) is creating growth industries for mature products—including auto manufacturing, capital goods, and steel. In addition, countries seeking to attract foreign participants offer protected environments and/or assistance and inducements.

Such status can prove tempting for foreign companies establishing operations, but early foreign entrants often find it hard to maintain adequate profitability once tax holidays end and/or new entrants are in place. (Again, China offers a good example: the government's decision to allow the entrance of additional Western, Japanese, and Korean auto manufacturers has created a high degree of competition with rapidly declining profit margins, despite very rapid market and sales growth.)

Potentially onerous government regulations, policies, and requirements, as well tolerance of illicit activity—such as proprietary technology transfers/piracy, are additional risk elements that need to be considered.

Competitive Position

Competitive positioning is the cornerstone of business risk analysis. While the industry environment, whether favorable or unfavorable, will strongly influence the business risk, differences in competitive positioning can justify substantial differences in credit standing among industry players. A strong business profile score can only be achieved through a very competitive position. Such status supports revenue and cash flow stability—and generally goes in tandem with superior profitability measures. A comparatively weak competitive position—even in the most favorable industry environment—is unlikely to result in a solid credit standing.

Sustainability is key

The sustainability and trend of a competitive position are critical rating factors. Sustainability of competitive advantage is often determined by cost leadership or product differentiation. A broader evaluation would look at:

- Product positioning (quality, pricing) and brand reputation;
- Market shares, the installed customer base, and geographic coverage;

- Distribution capabilities;
- Customer relationships;
- Technology/manufacturing capabilities; and
- Meaningful barriers to entry, such as transportation, capital or technology intensive-ness, and regulation.

The assessment of these factors must, of course, be forward looking; we use historical data only to the extent that they provide insight into future trends.

Several other factors also are critical in determining the strength and sustainability of a company's competitive position. Vertical integration, for instance, often enables a stronger competitive position—although not necessarily higher returns on capital employed—protection of the customer base, and pricing power, as well as better ability to adjust to technology developments. That said, it is of utmost importance for a company to have the strongest grip on that part of the value chain that comprises the highest value added.

Market share analysis can be a critical component, but only when weighed in the context of industry dynamics. In noncommodity sectors, market share analysis often provides important insight into a company's competitive strength. A large share, however, is not always synonymous with a competitive advantage or with industry dominance. If an industry has a number of similarly large participants, none may have a particular advantage or disadvantage. (This is the case of the mature U.K. mobile telephony market, which, despite having four competitors with roughly similar large market shares, is characterized by intense competition, yielding relatively low margins for all market participants.) Even duopolies (such as the aircraft manufacturing industry) do not necessarily ensure high and stable margins. Highly fragmented industries (such as transportation—with airlines being a good example) may lack pricing leadership potential altogether. These examples underline the limits of market share analysis without understanding the industry context.

Global industries typically are characterized by gradual market consolidation and the risk of product commoditization; only large, cost-efficient players with vast

research and distribution capabilities are able to sustain or reinforce their business positions and profitability.

In contrast, companies operating in local industries may benefit from transportation barriers, long-term regulatory advantages, or a locally large installed asset or customer base. This is sometimes the case for food retailers, which can enjoy all these advantages, helping them achieve relatively solid business risk profiles, based on entrenched and well-managed local positions.

Comparing mature and fast-growing markets

An emerging or fast-growing market offers considerable growth prospects, but competitive positions in such markets are likely to be more volatile. Companies may reap substantial benefits over a relatively short period of time but find it difficult to manage over the long haul. (Moreover, fast-growth companies often tend to retain high-risk financial policies as they aggressively pursue ever more ambitious objectives, thereby limiting potential credit quality.) The promise of small companies can fade very quickly on growth-related risks, including management's experience and resources to enter new markets, or to integrate acquired companies.

A mature market, although perhaps not appealing from an earnings growth standpoint and possibly exposed to risks of price commoditization or revenue decline, can mean greater protection for market shares. Large companies in mature markets have substantial staying power. Their sizable staff, vast array of disposable assets, and often-significant restructuring potential can positively influence their fates.

Generally, we would therefore favor a solid, established position in a mature, consolidated industry, which would have greater ability to offer predictable revenue and earnings streams, and to protect a company's capacity to service its debt over the long term.

Diversification can enhance the business risk profile

Having a diverse range of products, customers, and/or suppliers helps cushion a

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company against adversity. Geographic spread can also afford some protection against adverse changes in regional markets and economies, to the extent that the markets for a company's products or services are sufficiently uncorrelated.

When a company operates in more than one business, we analyze each segment separately. We then form a composite from these building blocks, weighing each element according to its importance within the overall organization. (Determination of importance can vary; we often use earnings contribution, especially if segment cash flow data are unavailable.)

Diversification that includes a good competitive position in several industry segments is then considered as a positive credit factor. The business profile of a company solidly positioned in an array of cash-generative businesses with different industrial cycles is stronger in terms of credit quality than each of the best-ranked stand alone competitors.

However, we generally are cautious with respect to the benefits of business diversification related to weaker competitive positions or activities exposed to a very difficult industry environment.

Global conglomerates generally achieve some of the highest ratings among corporate issuers. Impressive geographic spreads, balanced exposure to cyclical industries and economic conditions, and often very sizable market shares in consolidated, well-protected markets are common features of some of the world's largest conglomerates, such as U.S.-based General Electric Co. (AAA/Stable/A-1+).

Size and ratings end up being highly correlated

While we have no minimum size criterion for any given rating level, size and ratings do end up being correlated, given that size often provides a measure of diversification, and/or affects competitive positioning.

It is relative—not absolute—size that is crucial in determining market position, extent of diversification, and financial flexibility. Small companies also can enjoy the competitive advantages that accompany a dominant market position, although such a situation is not common. In this sense, sheer mass is not important; demonstrable market advantage is.

Accordingly, small or modest size generally is a negative rating factor if there is significant divergence in size and market shares between the market leaders and smaller players. Nevertheless, small and midsize enterprises can survive and perform satisfactorily in industries dominated by companies with large market shares, provided they can build defensible market positions in niche segments of the industry. German sports car designer and manufacturer Porsche AG (not rated) has successfully defended and expanded its strong position in luxury sports cars with respect to competitors owned by large car manufacturers.

As noted, large companies in highly fragmented industries may find it difficult to exert influence over pricing; instead, all industry players are exposed to intense competition. This is the case in the semiconductor industry, for example (with the exception, perhaps, of the microprocessor segment), where none of the large players has demonstrated a long-term ability to differentiate themselves in a highly competitive environment. The transportation and logistics industries are other good examples.

Large size also is often positively correlated with low cost. Economies of scale in purchasing, manufacturing, and distribution can provide large companies with better cash flow characteristics, which is of particular importance at the downside of the cycle. In some cases, like forest products, group size may not be the most critical aspect of cost advantage; rather, the size of the individual production units—in particular the size of the machines—is critical.

Also, small companies are, almost by definition, more concentrated in terms of product, number of customers, and geography. In effect, they lack certain elements of diversification that can benefit larger companies. To the extent that market and regional economies change, a broader business scope affords protection.

In addition, the impetus to grow dramatically tends to be higher for players aiming to access the industry's first tier than for industry giants that already achieved that status. Ambitious growth strategies often entail significant financial and implementation risks.

Accordingly, we pay much attention to management's plans for achieving earnings growth. Can existing businesses provide satisfactory growth, especially in a low-inflation environment, and to what extent are acquisitions or divestitures necessary to achieve corporate goals? At first glance, a mature, cash-generating company offers a great deal of bondholder protection; but we presume a company's central focus is to increase shareholder value over the long run. In this context, a lack of indicated earnings growth potential is considered a weakness.

How Company Management Influences Business And Financial Risk

Management evaluation is an input for both business risk and financial risk profiles—reflecting the fact that management's strategy, decisions, and policies affect all aspects of a company's activity. The evaluation includes a review of the credibility and realism of management's strategy and projections, its operating and financial track record, and its appetite for assuming business and financial risk

Our judgments regarding management's strategy and operating track record help determine our view of competitive position, a key element of the business risk profile. We try to assess management's competence—and its role in determining strategic and operational success.

We bear in mind that success can be more difficult to achieve in some industries than others, simply because of the inherent risk characteristics of the business. Various airline executives, reflecting on the periodic and damaging price wars endemic to the U.S. airline industry, have observed that "you are only as smart as your dumbest competitor." Management's reputation within an industry complements our evaluations.

Each industry has its own specific challenges and constituencies that management must deal with. Heavily unionized industries, such as automakers, steel, and airlines, may face difficult labor relations—and how management handles unions and employees can determine a company's fate in cases where a strike could be fatal to operations. Relations

with regulators or government officials are important in other sectors, such as utilities. Corporate governance and financial policy—including its risk tolerance—are part of our financial risk evaluation.

Strategies and plans

We compare management's future plans and assumptions with those of peer companies and with our own estimates. Implausible or overly optimistic projections can indicate poor internal planning capabilities or an insufficient grasp of the challenges (or opportunities) facing that company—especially if management fails to consider factors that peer competitors are focusing on. Indeed, one benefit of our access to management as part of the rating process is the opportunity to compare perspectives of various participants in an industry.

How strategy, plans, and policies are implemented helps determine our view of management consistency and credibility. In that exercise, determining why actual results fail to meet expectations is important. For example, meeting or exceeding projections could be the result of unanticipated good fortune, rather than a reflection of management's capabilities.

Accordingly, when reviewing projections or scenarios that are presented by management, we also strive to understand what could cause performance to deviate. We understand that forecasting is more difficult in some industries than others, and that unforeseen factors outside of management's control can upset the best-laid plans. A candid acknowledgement of risks and understanding of how various factors could affect earnings and cash flow is helpful for our internal deliberations—and may reflect favorably on management's credibility. Conversely, a record of abrupt or frequent changes in business strategy, including unexpected acquisitions, divestitures, or restructurings, definitely would raise our concern.

Acquisition strategy

Acquisitions often play a significant role in management's strategy. Although almost all mergers involve risk, well-executed acquisitions can make strategic sense. We try to fathom the company's acquisition criteria with respect to:

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- Strategic “fit”;
- Diversification objectives;
- Market share gains;
- Availability of excess cash resources; and
- Valuation considerations (cash flow multiples, internal rate of return, earnings accretion).

(Some of these considerations also reflect on management’s overall risk tolerance and financial policy, which are discussed below in the context of financial risk.)

Management’s approach and plans for poorly performing business units or those that no longer make strategic sense are a related area for investigation. Objective appraisals of businesses units and disciplined approaches to dealing with underperformers (divestiture, restructuring, or discontinuing businesses are among the options in such cases) are viewed positively.

Corporate governance and its relationship to credit analysis

Our evaluation of governance as part of credit analysis is not focused on misappropriation of funds, lack of accountability, or other misdeeds. Rather, it covers a broad array of topics relating to how a company is managed; its relationship with shareholders, creditors, and others; and how its internal procedures, policies, and practices can create or mitigate risk.

The starting point is to identify the owners of the company. The nature of the owner—e.g., government, family, holding company, or strategically linked business—can hold significant implications for both business and financial aspects of the rated entity. Ownership by stronger or weaker parent companies can substantially affect the credit quality of the rated entity. Cross-shareholding of industrial groups and family-controlled networks, commonplace in certain parts of the world, can have positive or negative implications, depending on the specific situation. We never rate corporate entities on a standalone basis.

The corporate governance of family-owned businesses, for example, introduces added complexities. Do the various family shareholders agree on strategy? Have the owners hired professional management and allowed them sufficient authority and autonomy to

carry out their mission? What about management succession, or other involvement by children of the founder or owner? What about the possible desire to liquefy value in shareholdings through dividends or an IPO, and what are the implications of estate planning? Still, family ownership can hold certain advantages, in terms of adherence to long-term strategic goals and commitment of family resources to a business.

Ownership by private equity firms has become more common recently in the U.S. and Europe. Such owners typically are much more actively involved in management than public shareholders, and we seek to understand private equity owners’ strategy for the company being rated. Is the company a platform for organic growth, industry consolidation, or a cash cow? What is the typical holding period and exit strategy for the owners? Repaying debt (often incurred in a leveraged acquisition of the company) and eventually selling to a strategic buyer or through an IPO is likely to be a more creditor-friendly strategy than debt-financed dividends. Some of the larger private equity companies own multiple rated companies, giving us a track record by which to judge the owners’ statements of intent when a new investment of theirs is being rated.

The existence of more than one owner introduces the potential for conflicts over control. Joint owners might disagree on how to operate the business. Even minority owners can sometimes exercise effective control or at least frustrate the will of the majority owners. Whenever control is disproportionate to the underlying economic interest, the incentives for the stakeholders could diverge. This could result from existence of classes of shares with super voting rights or from owning 51% in each of multiple layers of holding companies. In either example, control might rest with a party that holds only a relatively small economic stake.

(Conventional, equity-oriented corporate governance analysis is very sensitive to share structure—for example, whether each type of share provides representational voting—out of concern that management or majority owners will act to the detriment of minority shareholders. Although this concern is not

the direct focus of our credit analysis, there is a penalty for companies considered abusive to minority holders. Perception of such conduct would, obviously, impair the company's access to investment capital. Furthermore, if a company mistreated one group of stakeholders, there would be serious concern that it could later try to shortchange other stakeholders, including creditors.)

Our evaluation of corporate governance is sensitive to potential organizational problems. These include situations where:

- There is significant organizational reliance on an individual, especially one who may be nearing retirement;
- The transition from entrepreneurial or family-bound to professional management has yet to be accomplished;
- Management compensation is excessive or poorly aligned with the interests of stakeholders;
- There is excessive management turnover;
- The company is involved in legal, regulatory, or tax disputes to a significantly greater extent than its peers;
- The company has an excessively complex legal structure, perhaps employing intricate off-balance-sheet structures;
- The relationship between organizational structure and management strategy is unclear;
- The finance function and finance considerations do not receive high organizational recognition; and
- The company is particularly aggressive in the application of accounting standards, or demonstrates a lack of opaqueness in its financial reporting.

And recent examples of poor corporate governance have contributed to impaired creditworthiness. These cases included:

- Uncontrolled dominant ownership influence that applied company resources to personal or unrelated use;
- Uncontrolled executive compensation programs;
- Management incentives that compromised long-term stability for short-term gain; and
- Inadequate oversight of the integrity of financial disclosure, which resulted in heightened funding and liquidity risk.

Still, board structure and involvement has not figured prominently in the rating process. Of course, if it is evident a company's board of directors is passive and does not exercise the normal oversight, it weakens the checks and balances of the organization. But considerations such as the proportion of independent members on the board of directors, presence of independent directors in the board-level audit committee, and the compensation of directors and senior management teams have limited relevance. It can be difficult to determine objectively whether a given level of compensation is excessive, or will result in a company strategy that is overly aggressive or mainly focused on short-term performance.

Indeed, strong corporate governance—in the conventional sense, demonstrated in part by the presence of an active, independent board that participates in determining and monitoring the control environment—does not by itself provide enhancement to creditworthiness. Governance qualities cannot overcome a weak business or financial risk profile, although they might contribute to protecting an already strong business.

Financial policy and risk tolerance: managing the balance sheet and more. We assess financial policies for aggressiveness/conservatism, sophistication, and consistency with business objectives. We attach great importance to management philosophies and policies involving financial risk. Accounting practices, capital spending levels, debt tolerance, merger activity, and asset sale frequency are all aspects of a management's financial policies (see *"Credit FAQ: Knowing The Investors In A Company's Debt And Equity," published April 4, 2006, on RatingsDirect*).

Policy differences between companies can be driven by various factors, including management preferences, business requirements, and/or shareholder value considerations. Policies should optimize for the typically divergent interests of the company's stakeholders—shareholders, creditors, customers, and employees, among others. Specifically, the company's goals with respect to its credit rating also need to be consistent with the balancing of those interests.

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Sophisticated business managers have thoughtful policies that target a variety of financial measures and acknowledge the interplay between business and financial risk. But a surprising number of companies have not given their financial policy serious thought, much less reached strong conclusions. For many others, debt leverage (either debt to capital or debt to EBITDA, calculated without any adjustment to reported figures) is the only focal point of such policy considerations.

In all cases, what corporate management says it will do must be viewed in the context of what it actually does and what makes sense for that entity to do. For example, an organization's leverage goals should be judged relative to its past record and future business requirements. A company that is increasing its capital spending beyond what can be met from internal cash flow should not be forecasting declining leverage unless there is a corresponding plan to sell assets or common equity. A skeptical analyst would question management on how exactly it plans to achieve both goals. The answers, and the company's subsequent performance, reflect on management's risk tolerance and credibility.

The analyst must consider the realistic choices available to management and how it responds. Similarly, debt usage and shareholder rewards need to be judged within the context of the company's cash-generating capabilities and the stability of those cash flows. We view a debt-financed dividend as very risky for a weak company with volatile cash flows, but such a move could be reasonable for a company that is generating substantial free cash flow and has already achieved a solid balance sheet.

We do not encourage companies to manage themselves with an eye toward a specific rating. The more appropriate approach is to operate for the good of the business as management sees it, and let the rating follow. Certainly, prudence and credit quality should be among the most important considerations, but financial policy should be consistent with the needs of the business, rather than an arbitrary constraint. If management forgoes attractive business opportunities merely to

avoid financial risk, the company may be making a poor strategic decision, sacrificing long-term credit quality for near-term balance sheet considerations.

In any event, pursuit of the highest rating attainable is not necessarily in the company's best interests. While 'AAA' is our highest rating, we do not suggest that it is the "best" rating. Typically, a company with virtually no financial risk is not optimal as far as meeting the needs of its various constituencies. An underleveraged company is not minimizing its cost of capital, thereby depriving its owners of potentially greater value for their investment. In this light, a corporate objective of having its debt rated 'AAA' or 'AA' is ordinarily suspect. Whatever a company's financial track record, an analyst must be skeptical if corporate goals are implicitly irrational. A company's "conservative financial philosophy" must be consistent with its overall goals and needs.

A high credit rating usually is more important for financial institutions than industrial companies. For companies with solid business risk profiles and the financial capacity to target ratings within investment grade, various motivations can affect financial policy. Two examples are the balancing of financial risk against cost of capital and reliable access to commercial paper markets. The former often leads to a target rating in the range of 'BBB+' to 'A'. The latter may suggest seeking a 'BBB' or 'BBB+' rating, which typically coincides with an 'A-2' commercial paper rating. Customer perception can be another motivating factor. Some defense companies say maintaining an investment-grade rating is important when selling weapons to governments outside the U.S.

Tolerance for risk extends beyond leverage. The mixture of fixed-rate and floating-rate debt (including use of derivatives to manage that) offers an example. Generally speaking, long-term assets such as factories are best financed using fixed-rate debt, while short-term working capital financing may be accomplished using floating-rate borrowings. Management should develop an appropriate maturity schedule and liquidity targets.

For companies with defined-benefit pension plans, management makes choices regarding the mix of investment assets. The

proportions of equity, fixed-income, and other investment assets should be developed with a view to the relative volatility of those investment assets. We review such investment choices and compare assumptions (e.g., discount rate) with those of other companies in the same industry. Other potential sources of earnings and cash flow volatility are exposure to foreign exchange or commodity price movements. Use of derivatives to manage such exposure is reviewed as part of our overall financial risk assessment, but the choices made by management also reflect on its appetite for risk.

Accounting And Financial Reporting

A company's financial reports are the starting point for the financial analysis of a rated entity (or issue). Such analysis must consider the accounting basis a company uses to prepare its financial reports and the implications of the varying methodologies and assumptions on the reported amounts.

Understanding the implications of the accounting basis used—e.g., International Financial Reporting Standards (IFRS), U.S. Generally Accepted Accounting Principles (U.S. GAAP), or other local or statutory GAAP basis—is highly germane to our corporate rating methodology. But analytical challenges exist even for companies using the same accounting basis, because accounting rules often provide optional treatment for certain items (e.g., LIFO rather than FIFO to account for inventory under U.S. GAAP, optional hedge accounting, or optional revaluation of certain assets or liabilities under IFRS). Moreover, as business transactions have become increasingly complex, related accounting rules and concepts have correspondingly grown more complex—and in many cases, subject to greater reliance on estimates and judgments.

Accounting failures in the early 2000s highlighted several fundamental shortcomings of the financial reporting process and its ability to comprehensively address the information needs of financial statement users. Shortcomings include both recognition and measurement issues (e.g., under what circumstances an item such as a special-purpose

entity, or a “synthetic lease” should be reflected on or off a company's balance sheet, and at what value), and transparency issues (e.g., what a company should disclose about the nature of off-balance sheet commitments, compensation arrangements, or related-party transactions).

These failures also reinvigorated the debate on the merits of using a principles-based, rather than a rules-based, accounting standards framework, and served as a catalyst for expediting convergence of global accounting standards. Relatively rapid rates of accounting rules changes have occurred—often hampering meaningful period-over-period comparisons. In addition, the broader concerns about clarity and accuracy of financial reports have been evidenced by a considerable increase in restatements.

To address these challenges, we have increased and systematized the emphasis we place on the understanding of issuers' accounting characteristics. We supplement our analysis with enhanced financial statement analysis both in terms of qualitative and quantitative considerations. Our ratings criteria include numerous quantitative adjustments we often make to reported financial results to increase consistency among peers, and to better align with our view of the underlying economic reality of a particular circumstance or transaction. Our analysts also employ adjustments to portray what we view as a more appropriate depiction of recurring activity. For example, we may adjust financial measures to exclude gains or losses that we view as unsustainable or nonrecurring.

As part of our ongoing surveillance process, we consider the impact of changes in accounting standards and the impact of special events or items reported by an issuer (e.g., acquisitions, dispositions, write-offs, internal control matters, restatements, and regulatory actions). As the amount of disclosure in financial statements varies by company and by jurisdiction, we engage in differing levels of interaction with our issuers to obtain additional data beyond what is reported in the company's financials.

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Evaluating accounting characteristics in the rating process

Our analysis of an issuer's financial statements begins with a review of the accounting characteristics, to determine whether the ratios and statistics derived from the statements can be used appropriately to measure the rated issuer's performance and position relative to both its peer group and the larger universe of corporate issuers. (The rating process is, in part, one of comparisons, so it is important to have a common frame of reference.) In doing so, we take an analytic rather than forensic approach.

The recent adoption of, or moves to adopt, IFRS in many countries—including Australia, Canada, and across the EU—as well as the ongoing effort to converge U.S. GAAP and IFRS, continues to further enhance comparability among companies. However, this ought not be seen as a panacea. Within IFRS, U.S. GAAP, and the separate national accounting systems, companies may choose among alternative accounting methods—for example, historical or amortized cost, as opposed to fair-value methods—and the resulting differences can have a significant effect on comparability among peers. In addition, even in applying the same methods within the same accounting frameworks, companies show varying degrees of aggressiveness in the underlying estimates and judgments they employ. Moreover, the carrying value of assets and liabilities can be greatly influenced by the historical development of a company—for example, whether it has grown primarily through internal development or through acquisitions, or whether it previously underwent a leveraged buyout or bankruptcy reorganization.

A company's scope of consolidation is an example of a key accounting characteristic that we consider to determine the relevant economic entity for analytical purposes. We look at whether there are non-consolidated affiliates, including joint ventures, where the company does not exert a high degree of control but which we feel should be consolidated for analytical purposes (given our assessment of their strategic importance, including ownership positions, the size of

the investments and whether a unique, interdependent customer/supplier relationship exists) even though they may be properly excluded from consolidation for accounting purposes. Consider The Coca-Cola Co. and PepsiCo Inc., where certain key unconsolidated bottling companies are viewed as part of an entire economic system: We accordingly consolidate these entities for analytical purposes. The converse may be true when we deconsolidate an entity that is properly consolidated for accounting purposes. There are many examples of industrial companies or diversified holding companies that consolidate financial or insurance subsidiaries; for analytical purposes, we use the equity method for such nonhomogenous business activities, to avoid the distortions that would pertain as reported.

With respect to a company's hedging and risk management policies and related accounting for derivative instruments, accounting results vary widely among companies, and commonly fail to adequately depict the underlying economics. Our framework for analyzing derivative use focuses on the business, financial, liquidity, controls/risk management, and financial statement risks. This analysis includes a determination of whether a company is using derivatives for trading and/or risk management purposes, and whether a company avails itself of special hedge-accounting treatment. As this area is both complex and fraught with inadequate disclosure by many issuers, our review often entails interaction with management to properly assess a company's derivative use and risk management practices.

The accounting characteristics we review and the emphasis placed on each depend on the nature of, and activity in, the industry in which the entity operates. For example, analyzing inventory and related consideration may be important for a manufacturing company, but less relevant for a hotel management company. Likewise, the analysis of oil or natural resources reserves or the use of percentage of completion accounting is relevant to only a handful of industries.

Analytical adjustments to financial statements

Making analytical adjustments to amounts reported in the financial statements of the companies we rate traditionally has been an integral part of our rating process. We make analytical adjustments to better portray economic reality and to level the reporting differences among companies, e.g., to arrive at measures we believe enable more meaningful peer and period-over-period comparisons; better reflect underlying economics; better reflect creditors' risks, rights, and benefits; and facilitate more robust financial forecasts. It is rarely possible to completely recast a company's financial statements, but making these analytical adjustments improves the analytical relevance and consistency of the financial ratios that we use in our credit analysis.

(Although our adjustments revise certain amounts reported by issuers under applicable accepted accounting principles, that does not imply that we challenge the application of said principles by the issuer, the adequacy of its audit or financial reporting process, or the appropriateness of the accounting basis used to fairly depict the issuer's financial position and results for other purposes. Rather, our methodology reflects a fundamental difference between accounting and analysis. The accountant necessarily must find one number to use in presenting financial data. The analyst, by definition, picks apart the numbers. Good analysis looks at multiple perspectives, then uses adjustments as an analytical tool to depict a situation differently for a specific purpose or to gain another vantage point.)

Examples of common adjustments include:

- Trade receivables sold or securitized;
- Hybrid securities;
- Surplus cash and "near cash" investments;
- Capitalized interest;
- Share-based compensation expenses;
- Captive finance activity; and
- Asset retirement obligations.

(See "Ratios And Adjustments" chapter for a full list and discussion.)

Changes in accounting standards

As part of our surveillance process, we monitor the potential impact of recent and pending

changes in accounting and disclosure standards, and other legislation affecting information included in financial reports.

Accounting changes should not have any direct impact on credit quality unless they reveal new information about a company, which then needs to be factored into our understanding of the company. (For example, the ratings for a few U.S. companies were lowered following the implementation of new accounting for retiree medical liabilities in the early 1990s, because little information was previously available about these obligations.) However, accounting changes can produce indirect effects. These include triggering of financial covenant violations; regulatory or tax consequences; or adverse market reactions as a result of changes in market sentiment about the company's apparent leverage, profitability, or capitalization; and, accordingly, can even influence changes in business behavior.

Consider the example of U.S. accounting standard SFAS No. 158, which requires full recognition of pensions and other postretirement obligations (e.g., retiree healthcare) on the sponsoring employers' balance sheet. Because we have long reflected an issuer's full postretirement liability by virtue of our adjustments to leverage and capitalization ratios, the adoption of this pronouncement has no direct ratings implications. However, the potential ancillary effects could be equally important to our consideration: As a result of the new standard, many companies will report substantially lower shareholders' equity and will appear more leveraged—and could affect dividend policies. In addition, many employers are changing the structure and funding levels of their postretirement plans as a consequence of changes in legislation and accounting standards, resulting in potential changes to amounts and timing of related cash flows.

Another example of changes in accounting standards that caused pronounced behavioral shifts: SFAS No. 123R, requiring the expensing of stock-options and other share-based payments. In anticipation of that change, many companies chose to accelerate the vesting of employee stock options in the year prior to adoption. The effect of such acceleration

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was to move compensation expense that would have been recognized in 2006 and future years to a pre-adoption year. (Such recognition was not required; only pro forma footnote disclosure of the expense was required under pre-SFAS No. 123R rules.) In addition, many companies have reconsidered their use of share-based pay as a result of the expensing requirement, and have made changes to their employee compensation plans—resulting, for some, in real changes to cash flows.

Information risk, restatements, and disclosure of significant events
To the extent we believe information risk exists, it can influence our decision to maintain a rating, assign a rating in the first place, or the level of the rating assigned. In cases where the information risk is so significant that it precludes meaningful analysis we would decline to assign a rating, or, where a rating is already assigned, withdraw or suspend that rating.

However, we ordinarily rely on the issuer's audited financial statements and the inherent checks and balances in the financial reporting process. Our analytical process does not include an audit, nor does it include a process of "verification."

A rating can sometimes be assigned even in the absence of audited financial statements. This especially is the case when a new company is formed from a division of another company that did produce audited financial statements. In other cases, there may be unaudited data—such as oil-production data—that corroborates company results.

Further, much additional information that is provided to us by management is unaudited, including preliminary financial data, quarterly financial statements, projections, operating data, pro-forma financial statements, cash flow data, and various scenario analyses, to name a few. We incorporate such data at our discretion, making judgments about the reliability of each input.

There have been many situations—especially recently—where rated companies have delayed filing their financial reports for various reasons, sometimes for significant periods of time. Such reporting delays, too, require judgment

regarding the implications, if any, for credit quality. We have no monolithic approach to such situations, rather, additional interaction with the company is required, as part of our surveillance process during the period in which formally issued and audited financial statements are lacking. Our interaction includes determining the cause for the delay and potential consequences, obtaining interim financial reports, discussing how the company is addressing ensuing regulatory or covenant matters, discussing liquidity prospects, and internal control matters, among others.

Filing delays happen for many reasons: In some cases, because of a restatement of prior-year financials; in others, from a review of an alleged financial-statement irregularity, or issues discovered with a company's internal controls process.

In any event, we are cognizant that lengthy reporting delays can result in adverse regulatory reactions and covenant compliance uncertainty. Delays, restatements, material weaknesses, and related investigations also can lead to other adverse results, such as auditor changes, personnel changes, lawsuits, management distraction, increased compliance costs, and challenges in accessing the capital market—the impact of which must be closely evaluated in our ratings process. The impact these events have on a rating depends on the unique facts and circumstances of each case.

With respect to violation of covenants, a liquidity crisis could result. Technical and actual defaults (including cross defaults) require waivers under debt agreements, and sometimes result in a company receiving a notice of default. Sometimes the question of whether or not a filing delay results in a default is not immediately clear when the delay is announced, or during the period of delay. In some cases, detailed information may not be available for some time, and we will react as we deem appropriate, based on our analysis of the best available information, through CreditWatch actions and intermediate rating changes, or—in extreme cases—withdrawal of the ratings.

In general, the impact of the instances involving financial-statement irregularities is hard to predict. The underlying reality can

range from an almost trivial problem to a complete audit and financial failure. Occasionally, a small problem can turn into a large one, as headline risk takes a toll on the company's access to financing. We critically weigh how pervasive these issues are, how they affect the enterprise's reputation and its ability to conduct future business, and broadly how proactively management and the board approach resolution to these matters.

Cash Flow Adequacy

Cash flow analysis focuses on understanding and forecasting how cash is generated and spent by a business. It incorporates identifying a company's cash flows, determining trends and sustainability, distinguishing operating from investing and financing flows, and understanding potential sources of distortion and future volatility.

All this must be considered in the context of a company's individual characteristics, such as, where it is in its life cycle. The ability to generate cash is determined by a firm's business prospects—competitiveness, market dynamics, economic environment, etc., while its need for cash is a consequence of the balance-sheet structure, management's financial strategy, and strategic needs.

An enterprise's capacity to pay debts or any other obligation, the core underlying concept of a credit rating, is determined by the ability to generate cash—not earnings, which is an accounting concept. Although there is generally a strong correlation between operating cash flow and profitability in the long run, many transactions and accounting entries may affect one and not the other during a specific period.

Aggressive accounting policies, for example, regarding revenue and expense recognition, asset write-downs, or adjustments to depreciation schedules, can have a material impact on earnings and none whatsoever on actual cash generation.

Liquidity pressures can arise even when a company reports robust earnings—e.g., when gains not realizable in cash for a lengthy period comprise a significant component of earnings or where the enterprise faces large capital expenditure requirements. Accordingly, cash

flow adequacy is typically the single most critical aspect of credit rating analysis.

Measuring cash flow

Discussions of cash flow often suffer from lack of a uniform definition of terms. Our analysts use numerous cash flow measures in the credit decision process, and the terms we use to define specific cash flow concepts are summarized here.

We begin to measure an issuer's operating cash flow generation using its funds from operations (FFO), which is defined as net income from continuing operations adjusted for depreciation, amortization, and other noncash and nonrecurring items such as deferred taxes, write-offs, gains and losses on asset sales, foreign exchange gains and losses on financial instruments, and undistributed equity earnings or losses from joint ventures.

The availability of cash for debt service for companies on a high growth spurt is ordinarily better appreciated after backing out the changes in working capital, and arriving at the operating cash flow (OCF). The use of the FFO metric for some regulated utilities, for instance, can be misleading as it does not capture the variation in regulatory assets or liabilities. In Brazil, for example, tariffs are revised only annually: the time gap between when the actual cash revenues or costs occur and the recognition in the income statement is substantial and might affect different fiscal years. Similarly for working capital-intensive industries such as retailing, OCF may be a better indicator of the firm's actual cash generation. Working capital, on the other hand, could be managed or manipulated by management depending on its liquidity or accounting needs. Accordingly, FFO has been frequently used as a comparative indicator of cash from operations. As OCF tends to be more volatile, FFO is often used to smooth period-over-period variation in working capital. It is used as a better proxy of recurring cash flow generation rather than the actual cash flow generated by the ability to manage working capital.

By deducting capital expenditures from OCF we arrive at free operating cash flow (FOCF), which can be used as a proxy of a company's cash generated from core operations. We sometimes exclude discretionary

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capital expenditures for capacity growth from the FOCF calculation, but in practice, it is often difficult to discriminate between expansion and replacement. And, while companies do have some flexibility to manage their capital budget to weather down cycles, such flexibility is generally temporary and unsustainable in light of intrinsic requirements of the business. For example, companies can be compelled to increase their investment programs because of strong demand growth or technological changes. Regulated entities (e.g., telecommunication companies) might also face significant investment requirements related to their concession contracts.

We calculate a company's discretionary cash flow by subtracting cash dividends (including to minority interests) from FOCF. The discretion in dividend pay-out will depend on a company's financial strategy. Companies with aggressive dividend pay-out targets might be reluctant to reduce the level of dividends even under some liquidity pressure. In addition, dividends of investment-grade companies are less likely to be reduced following some reversals—although they ultimately are discretionary.

Finally, cash used for acquisitions and/or received from asset disposals and other miscellaneous sources and uses of cash are subtracted or added to discretionary cash flow, and prefinancing cash flow is the end result. This metric represents the extent to which a company's cash flow from all nonfinancing sources has been sufficient to cover all internal needs, including the payment of dividends. We then reconcile prefinancing cash flow to various categories of external financing activity, such as borrowing or repayment, equity issuance, and to changes in the company's cash balances.

While EBITDA is a widely used indicator of cash flow, it has significant limitations. Because EBITDA derives only from income statement inputs, it can be distorted by the same accounting issues that limit the use of earnings as a basis of cash flow. Besides, EBITDA overlooks balance sheet items that might be tying or freeing up cash. It is better suited for more established companies, especially in relation to industry benchmarks.

Potential distortions affecting cash flows
Distortions to cash flow may arise from timeliness of income or expense recognition, classification of items, and other accounting issues. For example, the period in which companies choose to recognize income and expenses (such as the charge-off of uncollectible items, asset disposals, repairs and maintenance, etc.) depends on applicable GAAP, which may be subject to estimates and management's discretion.

Because cash flow is an indicator of a company's health and prospects, there is a bias to enhance apparent cash generation by treating cash inflows as operating in nature, and cash outflows as investing or financing in nature. But loose classification of flows into operating, investing, or financing can distort their true nature. Classification of investments as trading, available-for-sale, or held-to-maturity dictates if related cash-flows are treated as operating or investing. Operating margin hedging program results are treated as financing—while they reflect operational strategies.

Another source of distortion is translation of foreign-currency. Swings in working capital may only reflect the volatility of the foreign currency, and not the actual cash in the original currency. We would prefer to analyze working capital in the original currency—and reflect translation effects in a separate cash-flow entry.

Cash flow ratios

Analysts are encouraged to look at more than a single measure, to develop several perspectives. A company's individual characteristics and its business cycle will be better captured in certain ratios than in others.

Where long-term viability of a company is more certain (i.e., for more highly rated credits), there can be greater analytical reliance on FFO and its relation to total debt burden. In addition, more established, healthier companies usually have a wider array of financing possibilities to cover potential short-term liquidity needs and to refinance upcoming maturities. For more marginal situations, the focus shifts to free cash flow—after the various uses have been subtracted—and this is more directly related to current debt service. Some of the cash-flow metrics most used by our analysts include:

Debt payback ratios

- Funds from operations (FFO)/total debt: the most frequently used credit measure in industrial ratings;
- Operating cash flow (OCF)/total debt: captures working capital requirements;
- Debt/EBITDA: used as a proxy of debt repayment capacity for high-yield issuers; it can overstate repayment capacity by excluding interest burden—usually high for speculative ratings;
- Total debt/discretionary cash flow: provides an indication of how many years would be required to repay outstanding debt using current cash flows, but is subject to changes in dividend policy;
- Free operating cash flow (FOCF)/total debt: indicates a company's capacity to pay debt with internal operating cash flow; it is more critical when analyzing weaker companies, because speculative-grade issuers typically face near-term vulnerabilities that are better measured by free cash flow ratios.

Debt service ratios

- EBITDA/interest expenses: useful because of its simplicity, wide usage, and industry reference (peer comparisons, financial covenants, etc.);
- FOCF + interest expenses/interest expenses: similar to the EBITDA/interest ratio, but more comprehensive (after taxes, working capital and capital expenditure) and with lower potential for distortions;
- FOCF + interest expenses/interest expenses + 12-month debt maturities: measures the ability to pay interest and principal out of free cash flow; more appropriate for projects and entities with amortizing debts.

Financial flexibility ratios

- FFO/capital expenditures: indicates a company's internal flexibility to meet its capital budget;
- Capital expenditure/depreciation expense: a low ratio (typically, less than 100%) could indicate problems in the rate of replacement of plant and equipment—a strong ratio may indicate high-growth industries, and is needed to keep up with the competition.

Interpretation of ratios is not straightforward, and careful analysis always is required, because a similar ratio might lead to different conclusions, depending on company specifics. A company serving a low-growth or declining market may exhibit relatively strong free cash flow because of diminishing fixed and working capital needs. Growth companies, in contrast, exhibit thin or even negative free cash flow because of the investment needed to support growth. For the low-growth company, credit analysis weighs the positive, strong current cash flow against the danger that this high level of protection might not be sustainable. For the high-growth company, the opposite is true: Weighing the negatives of a current cash deficit against prospects of enhanced protection once current investments begin yielding cash benefits.

There is no simple correlation between creditworthiness and current levels of cash flow. Even for peer companies with very similar cash flow coverage ratios, the rating outcome can be very different, depending on their other business and financial characteristics.

Balance Sheet And Asset Protection

The main ratio we use for leverage analysis is total debt/total debt + equity.

What is considered “debt” and “equity” for the purpose of ratio calculation is not always so simple, and requires extensive analytical input. Our computation of total debt includes various off-balance sheet liabilities and analytical adjustments, as noted in the section on cash flow analysis. Similarly, the amount of equity is adjusted for hybrid securities in all their variations.

(See *Hybrid instruments* section of “*Ratios And Adjustments*” chapter for our adjustments and how we calculate them.)

We sometimes calculate supplemental ratios that incorporate the market value equity. These can have especial relevance in comparing companies with significant intangible assets. Traditional measures focusing on long-term debt have lost much of their significance, because companies rely increasingly on short-term borrowings. It is now

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commonplace to find permanent layers of short-term debt, which finance not only seasonal working capital but also an ongoing portion of the asset base.

Generally, we do not net out cash from the debt amount; however, we adopt a "net debt" approach in some situations, especially in countries (such as Japan and in Europe) where local practice is to maintain a large portfolio of cash and marketable securities. (In these situations, we also focus on cash flow to net debt.) Each situation is analyzed on a case-by-case basis, subject to additional information regarding a company's liquidity position, normal working cash needs, nature of short-term borrowings, and funding philosophy. Funds earmarked for future use, such as an acquisition or a capital project, are not netted out. This approach also is used in the case of cash-rich U.S. pharmaceutical companies that enjoy tax arbitrage opportunities with respect to these cash holdings.

In the case of hybrid securities, too, the analysis is based on their specific features—not the accounting or the nomenclature. For debt that is convertible at the discretion of the investor, depending on the future value of the common shares, it would be somewhat presumptuous for us to predict whether and when conversion will occur, so we ordinarily give little, if any, weight to the conversion potential.

Original-issue discount debt, such as zero coupon debt, is included at the accreted value. However, since there is no sinking fund provision, the debt increases with time, creating a moving target. (The need, eventually, to refinance this growing amount represents another risk.)

Nonrecourse debt is often included in the calculation; moreover, even nonrecourse debt of a joint venture may be attributed to the parent companies, especially if they have a strategic tie to the operation. The analysis may burden one parent with a disproportionate amount of the debt if that parent has the greater strategic interest or operating control or its ability to service the joint-venture debt is greater. Other considerations that affect a company's willingness to walk away from such debt—and other nonrecourse debt—include shared banking relationships and common country location. In some instances,

the debt may be so large in relation to the owner's investment that the incentives to support the debt are minimized. In virtually all cases, however, the company likely would invest additional amounts before deciding to abandon the venture. Accordingly, adjustments would be made to reflect the owner's current and projected investment, even if the debt were not added to the (parent) company's balance sheet.

More fundamentally, the nature and valuation of a company's asset mix is critical to determining the appropriate leverage for a given level of risk. Assets with stable cash flow or market values justify greater use of debt financing than those with clouded marketability. For example, grain or tobacco inventory are viewed positively, compared with apparel or electronics inventory; transportation equipment is viewed more favorably than other equipment, given its suitability for use by other companies.

Accordingly, we believe it is critical to analyze each type of business and asset class in its own right. While FASB and IAS now require consolidation of nonhomogenous business units, we analyze each separately. This is the basis for our methodology for analyzing captive finance companies.

Asset valuation

Knowing appropriate values to assign a company's assets is key to our analysis. Leverage as reported in the financial statements is meaningless if the assets' book values are materially undervalued or overvalued relative to economic value.

We consider the profitability of an asset as an appropriate basis for determining its economic value. Market values of a company's assets or independent asset appraisals can offer additional insights. However, there are shortcomings in these methods of valuation—just as there are with historical cost accounting—that prevent reliance on any single measure. (Similarly, using the market value of a company's equity in calculations of leverage has its drawbacks. The stock market emphasizes growth prospects and has a short time horizon; it is influenced by changes in alternative investment opportunities and can be very volatile. A company's

ability to service its debt is not affected directly by such factors.)

The analytical challenge of which values to use is especially evident in the case of merged and acquired companies. Accounting standards allow the acquired company's assets and equity to be written up to reflect the acquisition price, but the revalued assets have the same earning power as before; they cannot support more debt just because a different number is used to record their value. Right after the transaction, the analysis can take these factors into account, but down the road the picture becomes muddled. We attempt to normalize for purchase accounting, but the ability to relate to pre-acquisition financial statements and to make comparisons with peer companies is limited.

Presence of a material goodwill account indicates the impact of acquisitions and purchase accounting on a company's equity base. Intangible assets are no less "valuable" than tangible ones, but comparisons are still distorted, because other companies cannot record their own valuable business intangibles, i.e., those that have been developed, rather than acquired. This alone requires some analytical adjustment when measuring leverage. In addition, analysts are entitled to be more skeptical about earning prospects of an acquisitive company when these rely on turnaround strategies or "synergistic" mergers.

Preferred stock

Preferred stocks can qualify for treatment as equity or be viewed as debt—or something between debt and equity—depending on their features and the circumstances. Preferred stocks with a maturity receive diminishing equity credit as they progress toward maturity.

Preferred stock that may eventually be refinanced with debt is viewed as a debt equivalent, not equity, all along. While "perpetual" on the surface, these securities often are merely a temporary debt alternative for companies that are not current taxpayers, until they once again can benefit from tax deductibility of interest expense. Redeemable preferred stock issues may be

expected to be refinanced with debt once an issuer becomes a taxpayer. Preferreds that can be exchanged for debt at the company's option also may be viewed as debt in anticipation of the exchange. However, the analysis also would take into account offsetting positives associated with the change in tax status. Often the trigger prompting an exchange or redemption would be improved profitability. Then, the added debt in the capital structure would not necessarily imply lower credit quality. The implications are different for many issuers that do not pay taxes for various other reasons, including availability of tax-loss carry-forwards or foreign tax credits. For them, a change in taxpaying status is not associated with better profitability, while the incentive to turn the preferred into debt is identical.

Auction preferreds are even more problematic, given that the holders of these preferreds would pressure for redemption in the event of a failed auction or even a rating downgrade.

Liquidity

Gradual erosion in a company's fundamentals can ultimately lead to liquidity problems. Yet, even a company with a solid business position and moderate debt use, can, when faced with sudden adversity, experience an actual or potential liquidity crisis, or an inability to access public debt markets. Possible causes of such adversity include:

- A dramatic setback in the business caused by, for example, a crisis in consumer confidence, such as the precipitous market downturn following the terrorist attacks of Sept. 11, 2001. In particular, this event had a significant negative impact on the airline and travel-related industries.
- A large, adverse litigation judgment.
- Real or alleged management impropriety, including accounting abuses such as those at Enron Corp. in 2001, and Tyco International Ltd. in 2002.
- Large derivatives or trading losses.
- Sovereign intervention, for example, in the form of foreign currency controls, controls on bank deposits, or pricing controls, such as those in Argentina in 2002.

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We consider the challenges a company confronted by a shock or triggering event would face concerning its existing debt maturities, its ability to make internal adjustments to maximize near-term cash generation, and its access to external sources of liquidity and capital. Analyzing a company's ability to cope with such extraordinary challenges is a matter of assessing its liquidity or its options under stress.

Our analytical focus here is on the downside: whether the company can meet its obligations on a rainy day, rather than just under the expected circumstances. Speculative-grade issuers are more susceptible to liquidity crises, which, in their situations, can stem from upcoming interest and principal payments, financial covenants, and availability on revolving credit facilities.

In the context of a liquidity crisis, a company's business position cannot be considered a constant: The nervousness of customers and/or suppliers might impair the company's competitive standing, contributing to a downward spiral in its fortunes. Industrial companies with finance operations may be particularly vulnerable, given the funding required for such operations. Companies with trading operations are doubly vulnerable, given the risk-averse inclination of trading counterparties, coupled with heavy funding needs.

Often, the effect of such adversities is compounded by the triggering of contingent provisions included in credit lines, bond indentures, counterparty agreements, or operating agreements. Triggers can change minor adversity into a major crisis for the company (and, as such, we do not view ratings or other triggers favorably). These provisions take many different forms, with the trigger based on rating downgrades, the violation of financial benchmarks or ratio levels, "material adverse changes" (as interpreted by the creditor), share price declines, or ownership changes. They may set off default, acceleration, put, or collateralization requirements.

In any event, the starting point of liquidity analysis is the maturity schedule for debt and other long-term obligations. Near-term maturities include commercial paper; sinking fund payments and final maturity payments of long-term debt; borrowings under bank credit facilities with approaching expiration

dates; and mandatory redemptions of preferred stock. Other significant financial obligations may also need to be considered, for example, lease obligations, contingent obligations such as letters of credit, required pension fund contributions, postretirement employment payments, and tax payments. Even when analyzing highly creditworthy companies, it is necessary to be aware of the overall maturity structure and potential for refinancing risk.

Cash is king

The best sources of liquidity are surplus cash and near-cash on the balance sheet. This includes cash in the bank, cash equivalents, and short- and long-term marketable securities. (Indeed, we also look to some companies to maintain high cash balances against potential liquidity crises; these include bonding requirements in the case of U.S. cigarette companies, and cyclical reversals in the case of capital intensive manufacturers, such as the automobile companies.)

Of course, not all cash is surplus. Virtually every company has some base amount of cash necessary for day-to-day operations—which may be quite large, if the company is subject to wide swings in working capital. Companies with seasonal borrowing needs may build up large cash balances for use during the seasonal peak.

Additionally, restricted cash (disclosed separately) is unavailable for everyday funding and should not be factored into a liquidity analysis, because these funds have been set aside to satisfy a specific obligation. A subsidiary's loan agreements can also restrict dividends and upstream advances. This poses a problem for a holding company that would rely on such dividends or upstream loans to access cash at the subsidiary level.

Bank overdrafts should also be deducted from available cash balances. Offshore cash may be subject to a repatriation tax, in which case it should be discounted accordingly. For companies in emerging markets, it is important to consider whether the company's liquid asset position is held in local government bonds, local banks, or local equities, and whether the issuer will have access to these assets at times of stress on the sovereign.

To fully benefit from cash and near-cash holdings from a liquidity perspective, these assets must be readily accessible and available to support the company's immediate needs. Sometimes the company may not have free access to all the cash shown on the consolidated balance sheet. For example, offshore cash may not be available for a few business days—especially if it has to be converted from a foreign currency.

Other internal sources of liquidity
Any company faced with severe liquidity pressures can be expected to make internal adjustments to maximize near-term cash flow. Considering a company's flexibility to do so is an extension of normal cash flow analysis. There are several possible options for doing this.

Cash can be extracted from working capital by monetizing receivables through factoring or securitization, liquidating unneeded inventories, or stretching out payments to suppliers. However, if, for example, no factoring or securitization facilities are already in place, these may take several months to establish. If aggressive discounting is necessary to sell inventory quickly, such liquidations could have severe implications for the company's future pricing power and brand image. In stretching payment terms to suppliers, the company runs a risk of spreading alarm about its situation and, ultimately, making suppliers unwilling to ship goods.

Companies generally have some flexibility to reduce capital expenditures from planned levels, at least temporarily. As such, we look at maintenance, rather than discretionary capital spending plans. Maintenance capital spending may include plant refurbishing, and ordinary repair work and is necessary for the company to sustain normal operations. Pollution control projects needed to meet regulatory requirements have little deferral potential. Presumably, expenditures related to growth initiatives could be put on hold, and are discretionary in nature. In any case, it may take some time to reduce expenditures to the maintenance level if the company had already entered into contractual commitments related to its planned investments.

The business implications of reducing capital spending must also be considered.

Continued deferral of spending may make the company less competitive and more prone to operational problems. Additionally, beyond a certain point, management might rationally conclude that seeking protection from creditors through a bankruptcy filing would be preferable to permanently impairing the business by neglecting capital spending.

Curtailing operations with negative cash flow and divestitures

Discrete business units or product lines that are performing poorly or in a start-up mode could be suspended. Shutdown costs must be netted against the ongoing cash savings. Again, the implications of such actions for the business must also be weighed.

A company may choose to sell entire operations or lines of business to raise cash. These could include underperformers as well as strong businesses. Additionally, we consider the company's ability to realize value in light of market conditions for such assets, including the availability of interested buyers, as well as the likely time period for effecting transactions. Assets sold in a fire sale often do not recapture their full value. Dumping large blocks of stock may depress their value.

Asset sales may have mixed implications for the remaining business mix. For example, the sale of a profitable, cash-generating operation that had been the company's best business could have a negative impact on the company's business risk profile. Alternatively, a money-losing unit with heavy capital requirements could improve the business risk profile while bringing in some much needed cash.

Dividend deferrals offer a quick source of cash savings. But, dividend cuts often are visible signals of distress, and the negative perception in the capital markets that may result must also be considered: At the very least, such actions may hinder further equity issuance. Additionally, extended deferral of preferred dividends may create a growing liability on the balance sheet.

External sources of liquidity

A company's ability to tap external sources of funding may be jeopardized when it is overly

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reliant on one source of financing. In general, a company's experience with different financial instruments and capital markets gives management alternatives if conditions in a particular market suddenly sour.

Company size and recognition can play a role in whether it can raise funds in the public debt markets. Similarly, a company's role in the national economy—particularly outside the U.S.—can enhance its access to bank and public funds. Large issuers in a relatively small country often are favorably positioned to attract financing from that country's banking system. External sources of liquidity, including commercial paper, bonds, bank credit facilities, and equity issuance are discussed below.

Of all the sources of debt funding, commercial paper is the least reliable. Use of commercial paper to fund short-term assets (typically, inventory and receivables) or as a small component of a company's long-term funding is fairly common. However, when faced with severe adverse circumstances, companies often will not be able to roll over outstanding commercial paper as it matures—let alone raise additional sums.

Typically, only companies viewed as having a strong credit standing can access the market. The market for commercial paper rated 'A-2' or lower is much smaller than the market for that rated 'A-1' or 'A-1+', in part because of SEC regulation 2(a)7, which severely restricts holdings of lower-rated commercial paper by U.S. money market funds. The U.S. market for commercial paper rated 'A-2' or lower in 2007 was estimated to total about \$72 billion, compared with the approximately \$1.7 trillion of 'A-1' and 'A-1+' paper outstanding. Moreover, the 'A-2' market is subject to significant pressure during credit crunches.

When market fears build regarding a particular issuer, the term of commercial paper the issuer can place typically shrinks to a few days, thereby heightening refinancing risk. Market confidence can be lost very quickly. This was evident following Altria Inc.'s loss of access to the commercial paper markets following an unfavorable verdict and \$12 billion bonding requirement in the Price class action lawsuit. And, in addition to legitimate

concerns about a declining credit, the market can be spooked by unwarranted fears. For example, Columbia Gas Systems Inc. unexpectedly filed for bankruptcy protection in 1991 because of onerous natural gas take-or-pay obligations. Suddenly, other natural gas pipeline companies, many of which had minimal take-or-pay exposure, found it difficult to sell commercial paper.

Backup liquidity

Given the commercial paper market's acute sensitivity to credit quality, and the speed with which confidence can be lost, we consider it prudent for companies that issue commercial paper to make arrangements in advance for backup sources of liquidity. Backup liquidity protects a company from defaulting if it is unable to roll over maturing paper with new notes because of shrinkage in the overall commercial paper market, or an issuer's inability to access the commercial paper market because of company-specific issues.

Backup for commercial paper generally is provided by committed credit facilities, yet sometimes may take the form of excess cash that is specifically committed for this purpose. *(For a discussion of our commercial paper backup policies, see "Commercial Paper.")*

Bonds

The public bond market is far less risk-averse than the commercial paper market. Most investment-grade companies in the U.S. can gain access to the public debt market for a new bond issue at a reasonable rate. In other, less-developed countries, the public bond market may at times become inaccessible for even the most creditworthy companies (e.g., South Korea in early 2001). Placing debt is easiest for a company that has regularly tapped the market and that can issue debt in large amounts—thereby providing investors with a more liquid secondary market.

Although the market for speculative-grade debt is very large, this market is much more volatile. Speculative-grade companies, especially those on a deteriorating trend, may well have only intermittent access to this market, depending on market sentiments and liquidity. There have been times when even

'CCC'-rated debt found ready buyers, but there have also been periods when the entire junk bond market was effectively shut down.

Whatever the general market conditions, even investment-grade companies may have difficulty issuing public debt if one of the types of shocks discussed above has occurred. In theory, a company should be able to issue debt at some price, but in practice, debt issuance may well not be feasible if there is considerable uncertainty in the market about a company's situation and underwriters are, therefore, understandably nervous about undertaking a transaction on behalf of the company.

The price of outstanding bonds may be a good gauge of market sentiments—although technical factors can also influence pricing. Obviously, if existing bond spreads have widened significantly relative to the market and are responding wildly to the day-to-day developments at a company, prospects for an additional public debt issuance are poor. (We monitor bond spreads as part of our ongoing surveillance.) The bond market has also been inaccessible during periods of overall market uncertainty following economic weakness, political changes, and terrorism actions or threats.

Bank credit facilities

Bank credit generally is a company's most reliable source for debt capital. When a company loses access to the commercial paper and public debt markets, banks are often the lenders of last resort. It is typical for banks to provide a portion of a healthy firm's company's regular financing. Speculative-grade companies have also accessed these markets more frequently in lieu of traditional public subordinated debt offerings. In some countries (including almost all less-developed markets), banks are the major source of capital for both short- and long-term needs.

Banks offer various types of credit facilities that differ widely in the commitment to advance cash under all circumstances. Weaker forms of commitment, although less costly to issuers, give banks great flexibility to redirect credit at their discretion. For example, uncommitted lines are little more

than an invitation to do business at some future date, and are given little to no credit in our liquidity analysis.

The strongest facilities are those that are in place and confirmed in writing, or committed facilities. In the U.S., fully documented revolving credits represent such contractual commitments. In the absence of a contractual commitment, payment for the facility—whether by fee or balances—is important because it generally creates some moral commitment on the bank. Generally, a solid business relationship is key to determining whether a bank will stand by its client.

Dependence on just one or a few banks heightens risks. Apart from the possibility that the bank will not have adequate capacity to lend, it also may not be willing to lend to the issuer. Having several banking relationships diversifies the risk that a single bank will lose confidence in the borrower and hesitate to provide funds.

Although less common anymore, in some cases, companies establish separate credit agreements with each of their banks, which can make it unwieldy to quickly renegotiate terms of the agreements in a crisis. A group of lenders having pre-established lending commitments under a common credit agreement is generally more practical, effective, and predictable. Even here, though, some features of the agreement could greatly hinder the renegotiation process—for example, a requirement that the agreement can be modified only by unanimous consent.

Concentration of banking facilities also tends to increase the amount of an individual bank's participation. As the amount of the exposure increases, the bank may be more reluctant to meet its commitment. In addition, the potential requirement of high-level authorizations at the bank for the release of funds could create logistical problems for the issuer in quickly accessing funds. On the other hand, a company will not benefit if it spreads its banking business so thinly that it lacks a substantial relationship with any of its banks. We expect banks themselves to be financially sound, and do not favorably view marginally investment-grade banks.

As with any source of debt funding, the analyst must consider the term structure of bank

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credit facilities. Reliance on short-term facilities poses obvious risks. Even multiyear facilities will provide commitments for only a short time as the end of their terms approaches. We closely monitor a company's efforts to arrange for the continuation of its banking facilities well before they lapse. In normal situations, bank facility expirations may be viewed as "soft" maturities because the facilities are routinely renewed. But, if the company is under stress and the banks have lost confidence in the company's prospects, the banks might use the expiration to demand repayment.

Financial covenants and triggers

In assessing a company's access to bank capital and other sources of debt financing, the analyst must consider triggers that can block access to additional funding, accelerate the repayment of existing debt, or create a cross default with other debt obligations. The most common such triggers are financial covenants in the form of ratio benchmarks. In certain cases, investors may take comfort from knowing that covenants (e.g., leverage tests) impose discipline on an otherwise financially aggressive management by prohibiting debt-financed acquisitions and special distributions to shareholders. In severe adversity, however, tight covenants could imperil credit quality by provoking a crisis with lenders if the covenants are violated: the lenders would have the discretion to accelerate the debt, causing a default that might otherwise have been avoided. Triggers may also be in the form of credit rating changes themselves, for example, a change in rating from investment grade to non-investment grade.

In considering just how the issuer's risk profile is affected by such provisions, the key considerations are: How close the company is to the trigger thresholds; how severe and immediate the consequences are; the amounts involved; and how material the amounts are in the context of the specific company. Borrowing agreements, even of creditworthy companies, are sometimes structured with tight covenants. The initial expectation is that lenders will routinely renegotiate the terms as the issuer's circumstances change. Even here, though, the existence of covenants can be problematic if, for

example, the lenders' strategies change and they wish to reduce their exposure to the borrower, or if a company is unable to meet its financial forecasts that were used as a basis of setting these covenants.

Violation of covenants in public debt issues always is serious, given the cumbersome procedure the company must follow to obtain waivers or to modify the covenants. In all cases, it is important to monitor the performance of a company against its most restrictive financial covenants. (We obtain bank loan covenant compliance reports directly from issuers, given the nonpublic information needed to compute the covenant values.)

Material adverse change (MAC) clauses represent another form of trigger. Remedies include the full range of possibilities that also apply to financial covenants. The vague definition of such clauses leaves much discretion to lenders. Still, cases of MAC clauses actually being invoked against corporate borrowers are extremely rare. The bank's reputation would suffer if it was not judicious in invoking the clause—and it would be subject to litigation. There undoubtedly have been instances, though, when companies have been dissuaded from tapping their credit facilities by the threat of a MAC clause being invoked.

Springing liens also can be problematic regarding financing flexibility. Sometimes, lenders may require the company to post collateral after a downgrade—which is provided for in the loan documentation. When assessing the impact of a springing lien, we consider how close the company is to the trigger; for example, if the company is rated 'BBB-' with a negative outlook, it is pretty close to a lien that goes into effect upon dropping to speculative grade. (With respect to recovery analysis, we always assume that a springing lien has been activated. The context for recovery analysis is a default scenario—and we assume that the trigger would have been breached in advance of default.)

Equity issuance

In theory, equity issuance is another source of capital; in practice, this source cannot be relied on in a crisis scenario. The public equity markets are extremely fickle. Selling new common stock generally is feasible

only if the company is seen as having at least decent prospects and the overall stock market is favorable. Moreover, accessing the common stock market may primarily depend on management's willingness to accept dilution. We therefore do not give companies credit for potential equity issuances until such transaction has been completed.

Selling preferred stock may be more acceptable to management because this avoids dilution of the common shareholders' earnings, but this usually is viable only if the company's continuing ability to meet its preferred dividend requirements is apparent.

Companies owned by other corporate or government entities can seek fresh capital from these owners. Often a strong parent or equity sponsor is available to provide much needed capital during a liquidity crisis.

The management factor

Finally, management's skill in coping with a liquidity crisis can make the difference between corporate life and death. Prudent financial managers will:

- Avoid excessive short-term debt;
- Spread debt maturities over time;
- Maintain cordial relations and credibility with banks, during bad times and good;
- Negotiate bank loan covenants with ample cushion while the company is financially strong;
- Anticipate potential covenant defaults before they occur and renegotiate covenants on a timely basis with the bank group;
- Maintain bank lines in excess of anticipated needs, and begin negotiating renewals well before expiration; and
- Fully draw credit lines at the onset of major difficulties. ■

Ratios And Adjustments

Key Ratios And Glossary Of Terms

Table 4 Key Ratios

Ratio	Formula
Operating income before depreciation	Operating income before depreciation and amortization/revenues and amortization to revenues
EBIT interest coverage	EBIT/interest
EBITDA interest coverage	EBITDA/interest
FFO interest coverage	FFO, plus interest paid, minus operating lease adjustment to depreciation/interest*
Return on capital	EBIT/average beginning of year and end of year capital
FFO to debt	FFO/debt
FOCF to debt	FOCF/debt
Discretionary cash flow to debt	Discretionary cash flow/debt
Net cash flow to capital expenditures (capex)	Net cash flow/capex
Debt to EBITDA	Debt/EBITDA
Debt to debt plus equity	Debt/debt plus equity

*The numerator reflects FFO before interest paid; the denominator reflects interest expense.

Table 5 Glossary Of Terms

Term	Definition
Capital	Debt, plus noncurrent deferred taxes, plus equity.
Capital expenditures (capex)	Funds expended to acquire or develop tangible and certain intangible assets. It includes the cost of acquisition of assets through leases and similar arrangements, and excludes capitalized costs that we expense as an analytical adjustment.
Cash flow from operations	This measure reflects cash flows from operating activities, not investment and financing activities. It includes interest received and paid, dividends received, and taxes paid in the period. Additionally, for some items such as postretirement benefits and asset retirement obligations, we include the (net) cost for the period rather than actual cash outflows, in order to separate what we view as financing of these obligations from the operating cost component.

Table 5 Glossary Of Terms (continued)

Term	Definition
Debt	Total short- and long-term borrowings of the company (including maturities), adjusted by adding a variety of on- and off-balance sheet financing arrangements pursuant to our adjustment methodology, and subtracting surplus cash, where applicable. Borrowings are measured at amortized cost (including remeasurement upon change in ownership of the issuer). Foreign-currency unhedged borrowings are measured at each period-end spot rate.
Discretionary cash flow	Cash flow from operations minus capex, minus dividends paid.
Dividends	Dividends paid to common and preferred shareholders and to minority interest shareholders of consolidated subsidiaries.
EBIT	A traditional view of profit that factors in capital intensity. However, it also includes interest income, the company's share of equity earnings of associates and joint ventures, and other recurring, non-operating items.
EBITDA	Operating profits before interest income, interest expense, income taxes, depreciation, amortization, and asset impairment. Excludes undistributed equity earnings of affiliates. While at times EBITDA is considered a proxy for cash earnings, changes in accounting make this increasingly an accrual-based earnings measure. The difference between EBITDA and operating income before depreciation and amortization is in the adjustments we make for operating leases, exploration expense, and stock-based compensation. Exploration expense is added back to EBITDA, rather than being treated as an operating cost. The operating lease adjustment to EBITDA increases for the implicit interest component of rent expense, but not for the depreciation component. Finally, the charge to earnings for share-based compensation is reversed in calculating EBITDA.
Equity	Common equity and equity hybrids, and minority interest.
Equity hybrids	The portion of hybrid instruments attributed to equity pursuant to our methodology for classifying such securities.
FOCF	Cash flow from operations minus capex.
FFO	Operating profits from continuing operations, after tax, plus depreciation and amortization, plus deferred income tax, plus other major recurring noncash items.
Interest	The gross amount of interest incurred (including amounts capitalized), adjusted for charges related to items that we add to debt; no subtraction of interest income, except where derived from assets structurally linked to a borrowing.
Net cash flow	FFO minus dividends.
Operating income before depreciation & amortization	A measure of operating profitability that excludes depreciation and amortization, to partly neutralize capital intensity as a factor when comparing the profitability of companies.
Revenues	Total sales and other revenues we consider to be operating.

Ratios And Adjustments

Incorporating Adjustments Into The Analytical Process

Our analysis of financial statements begins with a review of accounting characteristics to determine whether ratios and statistics derived from the statements adequately measure a company's performance and position relative to both its direct peer group and the larger universe of industrial companies. To the extent possible, our analytical adjustments are made to better reflect reality and to minimize differences among companies.

Our approach to adjustments is meant to modify measures used in the analysis, rather than fully recast the entire set of financial statements. Further, it often may be preferable or more practical to adjust separate parts of the financial statements in different ways. For example, while stock-options expense represents a cost of doing business that must be considered as part of our profitability analysis, fully recasting the cash implications associated with their grant on operating cash flows is neither practical nor feasible, given repurchases and complexities associated with tax laws driving the deduction timing. Similarly, the analyst may prefer to derive profitability measures from LIFO-based inventory accounting—while retaining FIFO-based measures when looking at the valuation of balance sheet assets.

Certain adjustments are routine, as they apply to many of our issuers for all periods (e.g., operating lease, securitizations, and pension-related adjustments). Other adjustments are made on a specific industry basis (e.g., adjustments made to reflect asset retirement obligations of regulated utilities and volumetric production payments of oil and gas producing companies).

Beyond that, we encourage use of nonstandard adjustments that promote the objectives outlined above. Individual situations require creative application of analytical techniques—including adjustments—to capture the specific fact pattern and its nuances. For example, retail dealer stock sometimes has the characteristics of manufacturer inventory—notwithstanding its legal sale to the dealer. Subtle differences or changes in the fact pattern (such as financing terms, level of inventory relative to sales, and seasonal variations) would influence the analytical perspective.

We recognize that the use of nonstandard adjustments involves an inherent risk of inconsistency. Also, some of our constituencies want to be able to easily replicate and even anticipate our analysis—and nonstandard adjustments may frustrate that ability. However, for us, the paramount consideration is producing the best possible quality analysis. Sometimes, one must accept the tradeoffs that may be involved in its pursuit.

In many instances, sensitivity analyses and range estimates are more informative than choosing a single number. Accordingly, our analysis at times is expressed in terms of numerical ranges, multiple scenarios, or tolerance levels. Such an approach is critical when evaluating highly discretionary or potentially varied outcomes, where using exact measurement is often impossible, impractical, or even imprudent (e.g., adjusting for a major litigation where there is an equal probability of an adverse or a favorable outcome).

Similarly, in some cases, the analyst must evaluate financial information on an adjusted and an unadjusted basis. For example, most hybrid equity securities fall in a grey area that is hard to appreciate merely by making numerical adjustments. So, while we do employ a standard adjustment that splits the amounts in two, we also prefer that our analysts look at measures that treat these instruments entirely as debt—and entirely as equity.

In any event, adjustments do not always neatly allow one to gain full appreciation of financial risks and rewards. For example, a company that elects to use operating leases for its core assets must be compared with peers that purchase the same assets (e.g., retail stores), and our lease adjustment helps in this respect. But we also recognize the flexibility associated with the leases in the event of potential downsizing, and would not treat the company identically with peers that exhibit identical numbers. Likewise, in a receivable securitization, while the sale of the receivables to the securitization vehicle generally shifts some of the risks, often the predominant share remains with the issuer. Beyond adjusting to incorporate the assets and related debt of the securitization vehicles, analysts must appreciate the funding

flexibility and efficiencies related to these vehicles and the limited risk transference that may pertain.

Apart from their importance to the quantitative aspects of the financial analysis, qualitative conclusions regarding the company's financial data can also influence other aspects of the analysis—including the assessment of management, financial policy and internal controls.

Communicating our adjustments and related criteria

We traditionally have incorporated analytical adjustments to the ratings process. Our published key ratio statistics are also adjusted to reflect many of the adjustments made.

Since 2003, we have published accounting sections that outline our view of the issuer's accounting characteristics, including the underlying considerations and key adjustments made in our published industrial companies' issuer reports. The purpose is to capture in one place the major accounting issues that affect an issuer's financials, their related analytical significance, and the adjustments made; it is not intended to be a summary of every accounting policy.

We provide a reconciliation table in our credit analysis reports on corporate issuers (See *"New Reconciliation Table Shows Standard & Poor's Adjustments To Company Reported Amounts," published Oct. 3, 2006, on Ratings Direct*). It is a bridge between a company's reported amounts and various Standard & Poor's adjusted measures. The reconciliation table begins with company reported amounts for a range of balance sheet, earnings, and cash flow measures, then lists adjustments to each measure by topic and our total adjusted measure. Not all adjustments are included as of yet in these reconciliation tables. We are modifying our software to incorporate additional adjustments—but some adjustments may not be included, as they do not lend themselves to precision or standardization (e.g., litigation or other contingencies).

Occasionally, adjustments are based in whole or in part on nonpublic information provided to us during the rating process. Our rating analysis, evaluation, and commentary

incorporate consideration of this information, but our published data refer exclusively to publicly available information.

Our criteria governing financial-statement adjustments are subject to ongoing review and occasional revisions necessary to address changes in accounting rules and in response to emerging financial products and structures—consistent with our broad objective of maintaining a dynamic criteria framework capable of addressing evolving market conditions in a timely and comprehensive manner.

When considering significant criteria changes (including ratio adjustments), we solicit public input and comments. In addition, we encourage ongoing dialogue with market participants regarding all criteria matters. We regard this dialogue as an important facet of maintaining a robust criteria framework, responsive to the needs of those who use our ratings and other market participants.

Encyclopedia Of Analytical Adjustments

The following sections outline the specific adjustments we use in analyzing industrial companies. At the end, we include our key ratios and their definitions. The list of adjustments, in alphabetical order, includes:

- Accrued Interest And Dividends
- Asset Retirement Obligations
- Capitalized Development Costs
- Capitalized Interest
- Captive Finance Operations
- Exploration Costs
- Foreign Currency Exchange Gains/Losses
- Guarantees
- Hybrid Instruments
- LIFO/FIFO: Inventory Accounting Methods
- Litigation
- Nonrecourse Debt Of Affiliates (Scope Of Consolidation)
- Nonrecurring Items/Non-core Activities
- Operating Leases
- Postretirement Employee Benefits/Deferred Compensation
- Power Purchase Agreements
- Share-Based Compensation Expense

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- Stranded Costs Securitizations Of Regulated Utilities
- Surplus Cash
- Trade Receivables Securitizations
- Volumetric Production Payment
- Workers Compensation/Self Insurance

Accrued interest and dividends

Accrued interest that is not already included in reported debt is reclassified as debt. This adjustment allows more consistent comparisons of companies' financial obligations, by eliminating differences arising from the frequency of payments—for example, quarterly, rather than annually—or calendar dates of specific payments—for example, January 1 or December 31.

In a similar vein, accrued dividends on hybrid equity securities are treated as debt, irrespective of the extent of the securities' equity content. (Deferred amounts—whether the deferral was optional or mandatory—are also usually treated as debt, given the need to pay them in a relatively short time. Obviously, we would not include amounts that are non-cumulative, which never will be paid.)

Adjustment procedures

- Balance sheet: Accrued interest and dividends accrued on hybrid securities are reclassified as debt. There is no adjustment needed to equity.
- Cash flow statement: Because the impact usually is quite limited, no adjustment is performed to FFO or OCF. Annual cash flow is not affected by payment frequency or dates, except in the year a particular security is issued or retired.

Asset retirement obligations

We treat asset retirement obligations (AROs) as debt-like liabilities. AROs are legal commitments, assumed when commissioning or operating long-lived assets, to incur restoration and removal costs for disposing, dismantling or decommissioning those assets. Examples include the costs of plugging and dismantling on-and off-shore oil and gas facilities; decommissioning nuclear power plants and recycling or storing used nuclear fuel; and capping mining and waste-disposal sites.

These commitments are independent from the level and timing of any cash flow generated by the use of the assets. In certain instances, we expect ARO costs to be reimbursed to the entity through rates or assumed by other parties. When the asset operator's costs are reimbursed by the government or via a rate-setting process, the entity bears far different and less open-ended economic risks—and may not require debt imputation. We have tended to view AROs related to nuclear power plants of rate-regulated U.S. utilities in this light.

Several characteristics distinguish AROs from conventional debt, including timing and measurement uncertainties; tax implications; and the standing of claimants in bankruptcy.

ARO measurement involves a high degree of subjectivity and measurement imprecision. Our starting point is the reported liability amount, which may be adjusted for anticipated reimbursements, asset salvage value, and tax reductions, further adjusted for any assumptions we view as unrealistic.

Most AROs involve obligations to incur costs that may extend well into the future. Uncertainties inherent in their estimation include:

- The amount of the ultimate cost of abandonment, which will depend on the relevant country's laws and asset-specific environmental regulations at retirement; the condition of the markets for the specific assets' retirement services; possible economies of scale for the operator; and whether the activities ultimately are performed by the operator or by a third party.
- The timing of asset retirement, which is subject to assumptions that can change materially. For example, in extractive projects, future price expectations for hydrocarbon or minerals affect the economic life of the assets. For power generators, asset-retirement timing depends notably on local regulatory decisions. Their impact might be favorable (i.e., in the case of an operating license extension) or unfavorable (i.e., in the case of an early mandated closure).
- The discount rate to be used in the present value calculation. U.S. GAAP requires the use of an entity-specific discount rate. Hence, the stronger the entity's credit, the lower the discount rate—and the higher the

liability. Similarly, the periodic accretion rate is lower for stronger credits, and higher for weaker credits. If nothing else, this hinders comparability across companies using U.S. GAAP, as well as to IFRS-reporting companies, which use market-related rates adjusted to risk-specific factors attributable to the liability.

AROs are recorded on a pretax basis under most accounting standards. Any expected tax benefits generally are reflected as a separate deferred tax asset on the balance sheet (because the ARO-related asset is depreciated). Tax savings, when they coincide with the ARO payments (as opposed to their provisioning), reduce the net cash cost, which we factor in our analysis to the extent we expect the company to generate taxable income in the particular jurisdiction.

- The obligation, net of any dedicated retirement-fund assets, salvage value, and anticipated tax savings, is added to debt. We generally adjust for the net aggregate funding position, even if some specific obligations are underfunded and others are overfunded.
- Adjustments are made on a tax-effected basis in cases where it is likely the company will be able to use the deductions.
- The accretion of the obligation reflects the time value of money and is akin to non-cash interest—similar to postretirement benefit (PRB) interest charges. Accordingly, we reclassify it (net of earnings on any dedicated funds, if applicable—but never less than zero) as interest expense for both income-statement and cash-flow statement analysis. We keep the net present value of the obligations newly incurred during the period (analogous to PRB service costs) within operating expenses. If dedicated funding is in place and the related returns are not entirely reflected in reported earnings and cash flows, the unrecognized portion of the return on these assets is added and the recognized portion is reclassified to interest expense and operating cash flow.
- Cash payments for abandonment and contributions into dedicated funds that exceed/are less than the sum of: newly incurred obligations plus accretion of existing obligations are reclassified as

repayment/incurrence of a debt obligation; this increases/decreases operating cash flow and funds from operations by the difference.

- For U.S. rate-regulated utilities that own nuclear power plants included in rate base, we have concluded that the decommissioning liability should not be viewed as a debt-equivalent liability. This is because of the safeguards that ensure funding sufficiency and collection of decommissioning costs in rates. Funding through customer rates and the probable nature of recovery result in a substantive liability defeasance.

Adjustment procedures

Data requirements

- The estimated asset retirement obligation (ARO), based on financial statement disclosure or analyst estimate.
- Any associated assets or funds set aside for the ARO.
- ARO interest costs, whether charged to operating or financing costs.
- New provisions (increases in liability during the period).
- Gain or loss on assets set aside for funding.
- Cash payments for AROs.

Calculations

- Subtract assets set aside to fund asset-retirement liabilities from the ARO to create a net ARO.
- Multiply this net obligation by (1 - the tax rate) to derive ARO adjustment for debt.
- Subtract both the gain (loss) on assets set aside from the sum of new provisions and interest costs and compare this amount to the cash payments made to arrive at the excess contribution/shortfall.
- Multiply this excess contribution/shortfall by (1 - the tax rate) to arrive at the ARO adjustments to funds from operations and cash flow from operations.

Procedures

- ARO debt is added to reported debt.
- ARO interest costs (net of ARO fund earnings) are removed from operating expenses, if they are included in these, and added to interest expense.
- The ARO adjustment to FFO is added to FFO.

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(Please see "Asset Retirement Obligations: How SFAS 143 Affects U.S. Utilities Owning Nuclear Plants," published March 31, 2004, and "Corporate Ratings Criteria, 2006 edition—Corporate Asset-Retirement Obligations," on RatingsDirect.)

Capitalized development costs

Costs relating to the conceptual formulation and design of products for sale or lease commonly are expensed on the income statement—while costs incurred subsequent to establishing the technological feasibility of these products are capitalized. The asset is then amortized over its estimated economic life.

Defining feasibility involves substantial subjectivity. Accordingly, the treatment of product or asset development costs sometimes varies substantially among companies or accounting regimes. For example, many U.S. software companies do not capitalize any software development costs (an analytically conservative approach), while others capitalize certain expenditures and amortize them over future periods.

Expensing, rather than capitalizing, can have a meaningful impact on a company's financial statements and credit metrics, making peer comparisons difficult. Automaker accounting for tooling poses similar comparability issues relating to varying capitalization policies.

While it is acceptable under the applicable accounting rules for a company to capitalize certain development costs, in order to facilitate comparability, we adjust reported financial statements. The amounts capitalized are treated as if they had been expensed. To the extent that the amortization of past capitalization equals current development spending, there is no impact on operating expenses, operating profit, or EBIT, but there is an impact on EBITDA and operating profit before depreciation.

This approach helps make companies' operating performance more transparent and comparable, regardless of their stance on capitalizing software and similar development costs. Note, that with respect to energy exploration costs, we take the opposite approach (*see adjustment for exploration*

costs), given the objective of comparability with most companies in that industry and the pragmatic aspects of doing so.

A company's position in its product life cycle has a great effect on its current spending relative to the amortization of past capitalization of development costs. However, as a practical matter—in the absence of more accurate figures—we use the annual amortization figure reported in the financial statements as a proxy for the current year's development costs. We realize, too, that the amount amortized is not entirely comparable across companies, as the amortization period for these assets may vary. For example, in the case of software, it typically ranges from two to five years.

Adjustment procedures

Data requirements

- Amount of development costs incurred and capitalized during the period.
- Amount of amortization of relevant capitalized costs.

Calculations

- EBITDA, operating profit before depreciation, and capital expenditures: subtract the amount of net capitalized development costs, or, alternatively, the amortization amount for that period.
- EBIT and operating profit after depreciation: subtract (or add, as the case may be) the difference between the spending and amortization in the period.
- FFO and capital expenditures: Subtract the amount capitalized in the period.
- Balance sheet accounts: We do not carry through the adjustment to the cumulative asset (and equity) accounts, weighing the complexity of such adjustments against the limited impact that can be expected in most cases on amounts that are secondary to our analysis.

(Please see "Accounting Issues In The U.S. High Technology Group," published Jan. 3, 2007, on RatingsDirect.)

Capitalized interest

We factor in capitalized interest as expense in the period when incurred. The valuation of property, plant, and equipment (PP&E) includes, under some GAAP, a cost of carry

element relating to multi-period project expenditures. Part of the rationale is that the company must factor the carrying costs when deciding on a project's economics, but this obscures the amount that actually must be paid during the period. Companies may also have significant discretion with respect to the amounts they capitalize, making comparisons difficult. Accordingly, we prefer to focus on total interest cost.

As a result, we reverse interest capitalization and include the amount as an expense. In the cash flow statement, we reclassify capitalized interest from investing to operating cash flow. This correspondingly reduces funds from operations and capital expenditure amounts. Free cash flow remains unchanged.

We do not adjust for the cumulative gross-up of PP&E resulting from interest capitalization, tax effects, or future depreciation effects. That is, we do not try to identify the portion of PP&E attributable to past interest capitalization, in order to reduce PP&E by the amount that would correspond to the expensed view taken on such interest capitalized in the past. It would be impractical to attempt to do so, given the lack of data available. Moreover, the more material impact tends to be to coverage and profitability measures, not to asset or equity-based ratios.

Adjustment procedures

Data requirements

- The amount of capitalized interest during the period.

Calculations

- Interest expense: add amount of capitalized interest; and
- Capital expenditures, FFO, and operating cash flows: reduce by amount of capitalized interest that is reclassified as operating cash flows.

Captive finance operations

A captive finance operation (captive) functions primarily as an extension of a company's marketing activities. The captive facilitates the sale of goods or services by providing financing (in the form of loans or leases) to the company's dealers and/or end customers. The captive can be structured as a legally separate subsidiary, or as

a distinct operating division or business line of the company. Captive finance units organized as separate subsidiaries are rated the same as their parents in the overwhelming majority of cases, meaning we view their default risk as indistinguishable from that of the parent.

Whatever the legal/organizational structure, the two businesses are not analyzed on a consolidated basis. Rather, we segregate financing activities from corporate/industrial activities and analyze each separately, reflecting the differences in business dynamics and economic characteristics, and the appropriateness of different financial measures. Our approach is to create a pro forma captive unit to enable finance-company analytical techniques to be applied to the captive finance activity, and correspondingly appropriate analytical techniques to the pure industrial company.

Finance assets (e.g., loans receivable and leases)—along with appropriate amounts of financial debt and equity—are allocated to the pro forma finance company; all other assets and liabilities are included in the parent/industrial balance sheet. Similarly, only finance-related revenues and expenses are included in the pro forma finance company income statement. The debt and equity of the parents and the captives are apportioned so that both entities will reflect, in most cases, identical credit quality.

In our analytical methodology for captive finance operations, we attribute debt and equity to the pro forma finance company based on our assessment of the quality of the finance assets, taking account of factors such as underwriting standards, charge-off policy, quality of the collateral, and portfolio concentration or diversity. The adjusted financial measures are highly sensitive to assumptions we make about the leverage appropriate to the finance assets in question. We continue to refine our leverage guidelines for major finance asset types.

Adjustment procedures

Note: In almost all instances, financial statements fully consolidate majority-owned captive finance operations: Here, consolidated

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financial statements are assumed as the starting point. Where separate financial statements are also available for the finance unit, information from these can be used to refine the adjustment.

Data requirements

- On-balance-sheet finance receivables and leases, net;
- Finance receivables and leases sold or securitized—carried off-balance-sheet;
- Finance company revenues (if actual finance revenues are unavailable, we use 15% of total finance receivables);
- Finance company administrative expenses (if actual finance company expenses are unavailable, we use 3% of total finance receivables);
- Debt to equity ratio: determined to reflect our view of the “leveragability” of the captive’s assets (on- and off-balance-sheet finance receivables and leases);
- Interest rate (the average rate experienced by the company); and
- Required fixed charge coverage—an interest coverage appropriate for the rating. (Often, 1.25x is used.)

Calculations

- Total finance assets = on-balance-sheet finance receivables and leases + finance receivables and leases sold or securitized (carried off-balance-sheet).
- Finance company EBIT = finance company revenues – noninterest expenses.
- Finance company debt = Total finance assets times the debt-to-equity ratio/(1 + debt-to-equity ratio). This can never be more than reported consolidated debt; if so, the debt to equity ratio should be adjusted. (Separately, consolidated debt also is adjusted to reflect the debt equivalent of securitized assets and hybrid securities.)
- Finance company equity = total finance assets – finance company debt.
- Finance company interest = most recent two-year finance company debt x interest rate.
- Finance company required EBIT = finance company interest x required fixed charge coverage.
- Transfer payment = finance company EBIT – finance company required EBIT (which can be positive or negative).

- Subtract finance company revenues from total revenues to derive adjusted industrial company revenues.
- Subtract finance company operating expenses, including depreciation, from total operating expenses to derive adjusted industrial company operating expenses.
- Industrial EBIT = adjusted revenues – adjusted expenses + transfer payment.
- Reduce reported interest by finance company interest, if reported captive finance company’s interest is included in consolidated operating expenses; otherwise, no adjustment is required.
- Reduce reported debt (adjusted for securitized assets) by finance company debt.
- Reduce reported equity by finance company equity (after increasing total reported equity by the minority interests in the captive finance company’s equity, if the captive is not fully owned, and its reported equity excludes minority interests).
- Remove the finance company’s cash flows, including capital expenditures, from reported cash flows.

(Please see “Criteria: Request for Comment: Risk-Based Framework for Assessing the Capital Adequacy of Financial Institutions,” published Jan. 12, 2007; “Criteria: Captive Finance Operations,” published April 17, 2007; and *Finance Subsidiaries’ Rating Link To Parent*, in “Corporate Ratings Criteria 2006” edition, on RatingsDirect.

Exploration costs

Under some accounting systems, oil and gas exploration and production (E&P) companies may choose between two alternative accounting methods, full cost and successful efforts. These accounting methods differ in what costs these companies capitalize or expense. A successful-efforts-reporting company expenses the costs of unsuccessful exploration drilling (dry-hole costs) and exploration costs, such as geologic and geophysical expenditures (seismic surveys) and the costs of carrying and retaining undeveloped properties. In successful-efforts accounting, only exploratory drilling costs that result in the discovery and development of a commercial oil and gas field may be capitalized and

amortized based on the field's proved reserves on a unit-of-production basis; all dry-hole expenditures are expensed as incurred. Using the full-cost accounting method, all exploration and development expenditures are capitalized and amortized over the reserves of the related pool of properties.

Another difference is the size of the cost center used to amortize capitalized costs. Successful-efforts companies use smaller cost centers, such as a particular lease or field; full-cost companies generally use larger cost centers, which may be as large as an entire country.

We view successful-efforts accounting as more appropriate, given the highly risky nature of hydrocarbon exploration. Successful-efforts accounting does not have the potential to inflate equity and smooth earnings to the same degree as full-cost accounting. In general, large companies (e.g., major integrated companies) use the successful-efforts method, while smaller companies (e.g., independent E&P companies) use the full-cost system.

However, our analysis of exploration costs requires making comparisons between companies that use different accounting methods, which can best be accomplished by adding back exploration expense to EBITDA for successful-effort companies. (While we prefer the successful efforts approach, there is no practical way to adjust full cost users to a successful efforts method.) Exploration expense usually is disclosed on the face of the income statement of successful efforts companies. This number often is referred to as EBITDAX.

Given our preference for successful efforts, we limit this adjustment to EBITDA measures—and do not carry the adjustment through to all related accounts or to other ratios. Adjusting EBITDA usually suffices for comparative purposes. And, adjusting a successful efforts company's balance sheet to reflect what it would look like if it had used the full-cost method—or vice versa—is not really feasible. (Apart from the differences as to what companies can capitalize under the two methods, the rules for asset impairment tests also differ. The full-cost impairment test, called the ceiling test, generally is easier

to violate because of higher asset carrying costs and its trigger mechanism. (If the book value of assets falls below the discounted present value of cash flows, a charge may be necessary. The trigger for ordinary impairment is related to the undiscounted future cash flows.)

Adjustment procedures

Data requirements

- Exploration expenses (only applies to E&P companies using the successful-efforts method of accounting).

Calculations

- Adjustment to operating income before depreciation, depletion, and amortization to calculate EBITDA: We add exploration expense back to operating income before depreciation, depletion, and amortization in the EBITDA calculation. This increases EBITDA and operating income before D&A by the entire amount of exploration expense.

(Please see "Credit FAQ: Exploring Standard & Poor's Oil And Gas Company Reconciliation Tables," published Feb. 12, 2007, on RatingsDirect.)

Foreign currency exchange gains/losses

Foreign currency exchange gains/losses can be related to transactions or translations:

- Transaction gains/losses arise from transactions that are denominated in a currency other than the entity's functional currency (generally the currency in which the entity principally transacts). Examples include buying and selling goods or services whose prices are denominated in a foreign currency, borrowing or lending in a foreign currency, or other contractual obligations denominated in a foreign currency. A change in the exchange rate will increase or decrease the amount of functional currency needed to settle the account between the time the transaction is recorded in the functional-currency accounts and the time it is settled, leading to exchange gains or losses. When translating the related accounts (e.g., loans receivable, accounts payable, and debt) into the reporting currency, such gains and losses are recognized in the income statement as incurred.

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- Translation gains/losses occur when translating financial statements of a subsidiary from a local currency to the reporting currency of the enterprise for consolidation. Translation gains or losses are included in shareholders' equity (under U.S. GAAP, included in other comprehensive income for the period and in accumulated other comprehensive income in the owners' equity section of the balance sheet).

Foreign currency transaction gains/losses recognized in the income statement raise questions similar to those in Nonrecurring Items/Noncore Activity (*see below*). To present a representative view of operating performance and financial ratios, we typically adjust company income statements to exclude nonrecurring and other unusual transaction gains and losses.

Currency transaction gains and losses may be viewed as recurring or nonrecurring. We review transaction gains and losses and determine whether or not to adjust for them. We may adjust reported financial results for currency gains and losses that result from one-time or infrequent transactions; for example, we may adjust (or exclude) foreign currency gains or losses resulting from the infrequent purchase of a specialized capital asset payable in a foreign currency.

When the gains or losses result from recurring or ongoing transactions, we do not adjust. We consider transaction gains and losses as ongoing when the company has a history of entering into transactions denominated in foreign currencies. The purchase of inventory that is paid in a foreign currency is an example. Debt denominated in a foreign currency could also result in recurring foreign currency gains and losses that we would not adjust for.

Companies may not report currency gains or losses separately for recurring and non-recurring transactions. Consequently, we may not make adjustments if the data are not available, or if the amount is immaterial. Our analysis must also take into account the potential for changes in actual cash flows that may be required to settle a transaction denominated in a foreign currency.

Translation gains/losses are not included in determining net income, but are included in

shareholders equity (and, under U.S. GAAP, in other comprehensive income) as mentioned above. Companies generally translate assets and liabilities using the exchange rate at the balance sheet date. The income statement is translated at the exchange rate in effect at the time revenues, expenses, gains and losses are recognized. The cash flow statement is translated using the exchange rate in effect at the time of the cash flow. As a practical matter, companies often use an average exchange rate for the reporting period for both income and cash flow statements. In addition, the cash flow statement reports the effects of exchange rate changes on cash balances held in foreign currencies on a separate line. We do not adjust the balance sheet, the income statement, or the cash flow statement for translation gains or losses included in other comprehensive income.

If a parent liquidates its investment in a foreign subsidiary (or investment), the amount of foreign currency gains or losses built up in equity are removed from equity and included in net income for the period. This amount should be excluded from income as a nonrecurring item (as would generally apply to the gain or loss resulting from the sale).

Adjustment procedures

Data requirements

- Amounts of nonrecurring (analytically determined) foreign currency exchange transaction gains and losses.

Calculations

- The amount of nonrecurring foreign currency gain or loss is added to or subtracted from operating income before and after D&A, EBITDA, and EBIT.

Guarantees

The accounting for guarantees can vary greatly. In many instances, a guarantee to support borrowings of unconsolidated affiliates or third parties is not recorded on the guarantor's consolidated balance sheet until it meets certain tests regarding probability of payment.

Alternatively, it may be recorded at the lowest amount in a range of possible outcomes or at a statistically calculated expected value (e.g., under IFRS, a contingent obligation may be

measured at a probability-weighted figure of potential payment amounts). To illustrate, if the company estimates a 70% chance of having to pay nothing and a 30% chance of having to pay €1 million, then the company obligation would be measured at €300,000, an amount that has no probability of being paid.

We may take a different approach, to reflect our own assessment of the risk of ultimately being required to pay (upon the default of the other party).

We add the guaranteed amount to the guarantor's total debt, unless the other party is sufficiently creditworthy (i.e., investment-grade) in its own right, or if we assess the likelihood of payment at a lower amount. (Interest is not imputed on such adjustment items, since the potential obligation may materialize far in the future, and there is no current need to service that potential obligation.)

In the case of an affiliate, we consider the possibility of support for the borrower's debt even absent a formal guarantee.

Performance guarantees are treated differently, because there should be little impact as long as the company maintains its work or product quality. Construction companies often provide performance guarantees as a condition in work contracts.

A company's track record of payments for performance guarantees could be an indicator of the amount of potential future liability. Only if the track record gives us specific reason for concern would we attempt an estimate of the liability—and add that amount to debt for ratio calculations.

Adjustment procedures

Data requirements

- Determine the value of the guarantees on and off the balance sheet to be added to debt, net of tax benefit, as applicable.

Calculations

- Debt: Add the amount of off-balance-sheet debt-equivalent; reclassify as debt the amount of on-balance-sheet liability.
- Equity: Subtract amount of off-balance-sheet debt-equivalent.

Hybrid instruments

Hybrid instruments have some characteristics of debt, and some of common equity. The

more weight the latter carries, the more equity content we attribute to the instrument. We classify corporate hybrids' equity content as minimal, intermediate, or high.

How to reflect hybrids in credit ratios is not a simple question. For many years, we did not divide the amounts involved in proportion to the equity content of the specific security, believing the resulting numbers could be misleading. As an example, a company might pay the stipulated periodic amount or defer it; under no scenario would it defer a fraction of the payment: Therefore, calculating a fixed-charge coverage ratio with a fractional amount has little intuitive meaning.

For hybrids with intermediate equity content, we instead computed financial ratios both ways—viewed alternatively, as debt and as equity. Two sets of coverage ratios were calculated—to display deferrable ongoing payments (whether technically dividends or interest) entirely as ordinary interest and, alternatively, as an equity dividend. Similarly, two sets of balance-sheet ratios were calculated for the principal amount of the hybrid instruments, displaying those amounts entirely as debt and entirely as equity.

For hybrids, analytical truth lies somewhere between these two perspectives, and analysts have been—and are—encouraged to continue viewing hybrids from all perspectives—i.e., computing ratios with the security as debt and, alternatively, as equity; to interpolate between the sets of ratios to arrive at the most meaningful depiction of an issuer's financial profile; and note and give effect to each more-equity-like or less-equity-like feature of various hybrids in the same category, although such nuances play, at most, a very subtle role in the overall rating analysis.

However, we changed our methodology in 2006 because it proved too challenging to communicate our previous, more abstract approach—and issuers, in particular, had trouble appreciating the potential impact on our view of their financial profile. Notwithstanding the issues mentioned above, we adopted the following adjustments (after adjusting convertible debt issued by IFRS reporting companies as described below):

- For hybrids in the intermediate category, we calculate ratios with outstanding amounts

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(excluding unpaid accrued remunerations) split 50-50: One-half of the principal is categorized as debt and one-half as equity; one-half of the period payments is treated as common dividends and one-half as interest. (There is no adjustment to taxes.) This set of ratios is used as the basic adjusted measures, and these are the ratios we publish.

- Hybrids with minimal equity content are treated entirely as debt for calculating ratios.
- Hybrids with high equity content are treated entirely as equity for calculating ratios.
- Unpaid dividends that have accrued, prior to period end, are viewed as debt—even for equity-like securities.

Convertible debt is not treated as a hybrid—unless the conversion is mandatory, or it features appropriate tenor, subordination, and deferability characteristics. While IFRS and other accounting regimes split the issued value of a convertible debt obligation between its pure debt component (the fair value of a similar debt obligation without the conversion feature), accounted for as debt, and the embedded conversion feature (the difference between the debt component and the issue price), accounted for as equity, such convertible debt generally does not attract any equity credit in our methodology. Rather, we adjust reported debt by the value of the conversion option included in shareholders' equity. Cash-based measures such as FFO continue to reflect only the actual cash cost of the convertible debt, based on the coupon rate.

Adjustment procedures

Data requirements

- Amount of hybrid instrument in the balance sheet and shareholders' equity;
- Amount of associated expense and payments in the period; and
- Amounts of accrued unpaid interest/dividends.

Calculations

- A high-equity-content hybrid reported as equity is treated as reported, as are its associated dividends. However, accrued dividends are included as debt.
- A high equity content hybrid reported as debt is removed from debt and added to equity. The associated interest charge is

removed from interest expense and treated as a dividend. Additionally, interest payments are also adjusted as dividends in the FFO and operating cash flow calculations.

- An intermediate equity content hybrid reported as equity (e.g., preferred stock) has 50% of its value removed from equity and added to debt. Also, 50% of the dividend amount is removed and added to interest expense and interest paid, impacting the FFO and OCF calculations.
- An intermediate equity content hybrid reported as debt has 50% of its value removed from debt and added to equity. Also, 50% of the associated interest is removed from interest expense and interest paid and added to dividends.
- A minimal equity content hybrid reported as equity is removed from equity and added to debt. Its associated dividends are added to interest expense and interest paid, thereby also reducing FFO and OCF.
- A minimal equity content hybrid reported as debt is treated as reported, as is its associated interest.
- The accrued unpaid charges on hybrid instruments are categorized as debt.

Note: For optionally convertible instruments, prior to the reclassifications above, we recombine the instrument's issued amount (amortized cost) if it has been bifurcated (as described above, notably for IFRS-reporting companies). We also adjust the period's expense, where necessary and practicable, to equal the instrument's debt component multiplied by the company's refinancing rate, at the convertible's issuance date, for the equivalent nonconvertible instrument.

(Please see "Criteria: Equity Credit For Corporate Hybrid Securities, published May 8, 2006, on RatingsDirect;" "Criteria: Clarification Regarding Step-Ups Used In Equity Hybrids, Aug. 9, 2007; and "Criteria: Standard & Poor's Announces Several Refinements To Its Hybrid Capital Criteria," Oct. 30, 2007.)

LIFO/FIFO: Inventory accounting methods
The choice of inventory accounting methods under U.S. GAAP between first-in, first-out (FIFO); last-in, first-out (LIFO); weighted

average; and specific identification can provide dramatically different results for peers that engage in the same underlying activities. This issue is more pronounced in sectors that are inventory-intensive, and in particular, where inventory prices fluctuate significantly.

The challenge of comparing peers increases on a global dimension. Similar choice of accounting options exists in generally accepted accounting standards other than U.S. GAAP—while LIFO, widely used in the U.S., is not permissible under many other accounting standards, including IFRS. Tax treatment of permissible inventory costing methods is a key driver in management's decision to elect a method, and varies significantly by jurisdiction. (For example, LIFO is permitted for tax-reporting purposes in the U.S., and those who elect LIFO for tax purposes must also use it for their financial statement reporting.)

Moreover, some companies use a combination of costing methods. For example, management may elect to use the LIFO method for a portion of inventory in which prices are expected to rise and FIFO for the balance. In other instances, inventory reported on a consolidated financial statement can include inventory balances of subsidiaries in different countries, each of which use different accounting methods.

The greatest potential disparity of financial results is between FIFO and LIFO accounting methods. In a period of rising prices, the LIFO method results in a lower income than FIFO, because the most recent costs flow into cost of goods sold on the income statement, and the oldest costs are reflected in inventory on the balance sheet. Furthermore, cash flows are temporarily improved, because current income taxes are lower as a result of the lower income. Apart from inter-company comparisons, different methods can skew the perspective of corporate performance. For example, LIFO provides a better reflection of matching costs against revenues on the income statement, but creates a balance-sheet distortion by having older costs residing in inventory. The FIFO method, on the other hand, provides a more current valuation of inventory on the balance sheet, but can significantly understate cost of goods

sold in a period of rising prices, resulting in artificially overstated income.

- **Balance sheet:** Where significant to our analytical process or essential for peer comparability, we add back the LIFO reserve to inventory amounts on the balance sheet for companies that use the LIFO method. This enables us to reflect inventory balances at approximate current market value. (Companies that apply the LIFO method are required to disclose what the inventory valuation would be under FIFO, through an account called the LIFO reserve, which represents the cumulative effect on gross profit from the use of the LIFO method.) A corresponding adjustment, net of tax, is made to equity.
- **Income statement:** We do not adjust the income statement when companies use LIFO, believing the LIFO method results in costs of goods sold that are more indicative of replacement-cost values, and the best matching to revenues. While it might be desirable to adjust for those companies that use FIFO or average costs methods, the data generally are unavailable.
- **When a company using the LIFO method has inventory balances that decrease over a period of time, LIFO liquidation may result.** It means that older, less-recent layers of inventory are turned into cost of goods sold as a result. (These are older in terms of their accounting, not necessarily in any physical sense.) Assuming an inflationary environment, cost of goods sold is reduced, and as a result, income increases because of LIFO liquidation gains. To capture the true sustainable profitability of a company, the gains generated from LIFO liquidation generally are excluded from our current profitability measures and ratios.
- **Cash flows:** We typically do not adjust the cash flows, but we consider, qualitatively, the boost to cash flows the LIFO method affords during periods of price inflation (via taxes deferred to future periods).

Adjustment procedures

Data requirements

- For the balance-sheet adjustments:
LIFO reserve.

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- For the income statement adjustments:
LIFO liquidation gains.

Calculations

The balance sheet adjustments affect inventory (assets) and equity.

- LIFO reserve is added to inventory (assets).
- Equity is increased by the LIFO reserve (after-tax).

The income statement adjustment affects operating income before and after D&A, and EBITDA and EBIT.

- LIFO liquidation gains are deducted from operating income when calculating operating income before and after D&A, and EBITDA and EBIT.

Litigation

We make case-by-case judgments regarding the probability of a negative outcome, the potential financial effect, and its timing, including duration of any appeals process. We also regularly obtain additional data from the company involved, on a confidential basis, to enable a more meaningful analysis of plausible scenarios. These might include any available legal opinions and research; the company's legal strategy; and the number, size, and status of claims. To assist us, we may consult legal counsel to evaluate likely scenarios. This includes in-house legal staff, external counsel, and/or industry-related counsel.

To the extent that a monetary judgment is predictable, we size the amount that will be paid and treat it as a debt-equivalent. If payment is not imminent—if, for example, there is an extended appeals process—we would estimate the time until actual payment, and discount the eventual payment amount unless interest will be added. The adjusted debt ratios are calculated including the present value of the estimated payout, on an after-tax basis. Where applicable, we subtract any expected insurance recoveries.

It usually is very challenging to size litigation outcomes. Previous cases of similar nature can serve as benchmarks. Subjective judgments regarding the merits of a case may also inform our view of possible outcomes.

Sometimes, the company's litigation reserves recorded in its financial statements can offer insight. Companies must reserve for litigation they can quantify. In practice, most

companies tend to minimize legal reserves (although some companies—especially European companies—will over-reserve to enable smoothing of future earnings). Therefore, to the extent that a company does reserve, one may ordinarily conclude there is a high likelihood that required payments will be at least that amount. The company's reserve is not a reliable indicator that the ultimate liability will not exceed that amount. In any event, providing reserves is merely an accounting recognition of the liability; it doesn't mean that the company has put aside cash to fund the liability. We would still need to adjust the debt figures to reflect the cash impact that a payment would entail. (On the other hand, there often will be a lengthy period until payment is made, so we also consider the company's ability to generate cash in the interim.)

A class-action suit permits a large number of individual claims to be combined and tried as one lawsuit. We view class-action lawsuits as the most troublesome type for credit quality because of the potential size of awards. Class-action suits must be certified by a court to proceed to trial; however, once certified, the lawsuit often takes years to wind through the litigation process.

Outside the U.S., litigation is less significant as a credit risk than in the U.S. Typically, there is no award of punitive damages, class actions are limited, and/or trials may not come before juries that can react unpredictably to the litigation.

Because the specific financial effect of a lawsuit is difficult to quantify accurately, we may rely on analytical techniques such as calculating ranges of outcomes or performing sensitivity analysis. This can be very helpful if it allows us to conclude, for example, that the company can manage even the more dire potential outcomes without materially affecting its financial profile. Alternatively, if significant uncertainty remains, we might consider a downgrade based on a very large risk exposure.

Litigation poses several important, potentially troubling considerations beyond any direct financial consequences. We consider the potential damage to a company's reputation or ability to conduct normal business operations. For example, product liability

cases sometimes result in the product's being removed from the market. Substantial litigation may require an inordinate amount of management time and create quite a distraction from running the business.

More broadly, lawsuits can affect a company's reputation and/or its ability to garner further business or raise capital. Public mistrust and a negative perception of the company's operating strategy would definitely be of concern.

Last, but not least, bonding requirements can pose a tremendous liquidity challenge, especially in jurisdictions that have no bonding caps. Bonding can tie up cash that could otherwise be invested in the business, even if it does not pose an immediate threat to solvency. (Naturally, in the case of litigation expected to benefit the company, similar adjustments apply, in reverse.)

Adjustment procedures

Data requirements

- Determine the value of the litigation exposure to be added to debt.

Calculations

- Debt: Add the amount of debt equivalent (net of tax benefit, as applicable) to debt; and
- Equity: Subtract the amount of off-balance-sheet debt equivalent, net of tax.

(Please see "How Litigation Risk Affects Corporate Ratings," published Nov. 28, 2005, on RatingsDirect.)

Nonrecourse debt of affiliates (scope of consolidation)

In the context of corporate debt analysis, non-recourse debt often refers to a situation in which an affiliate or subsidiary of a company borrows funds, possibly pledging its assets as collateral, while the parent company and other subsidiaries in the corporate structure have no legal obligation to perform under the borrowing agreement. If an event of default occurs, the lender's claims are limited solely to the subsidiary that borrowed the money.

Non-recourse debt may exist for a variety of reasons. A company may want to legally isolate the bankruptcy risk of a subsidiary, for example, because the subsidiary's business

prospects are more unpredictable than those of the parent. Also, non-recourse debt may result from a particular jurisdiction's legal requirement to operate locally through a separate legal entity. In other cases, a company may own only a portion of a subsidiary, maybe even a minority interest, and the company may be unwilling to put itself on the hook to fund the obligations of the joint venture.

In non-recourse structures, the parent company has the legal right to walk away from the troubled (or bankrupt) subsidiary. This often is a by-product of corporate law and related legal isolation doctrines related to entities structured as corporations or other limited-liability structures. Notwithstanding the theory, history has shown this often is not the way things play out. The parent company often ends up providing economic support to the subsidiary, despite the non-recourse nature of the obligation.

In analyzing these situations, we attempt to understand the relationship between the parent and subsidiary, and make a judgment about whether the parent would be inclined to step in (and to what extent). While predicting the outcome of such a scenario is not an exact science, we believe that considering plausible scenarios is superior to relying solely on the legal framework, and ignoring the economic relationship extant between the entities.

The relationships between the affiliated entities can vary greatly. The entity issuing the debt considered to be non-recourse may simply represent a non-core, non-strategic investment; if so, the parent is not burdened with the subsidiary's debt obligations.

At the other end of the spectrum, the subsidiary's operations may be characterized as an integrated business. The analysis would then fully consolidate the subsidiary's financial statements, including debt. Furthermore, the risk profile of the subsidiary's operations would be integrated with the overall business risk analysis of its parent.

Often, the subsidiary issuing the debt may not fall neatly into either category; it may lie somewhere in the middle of the spectrum. Sometimes we use a pro rata consolidation to reflect this middle ground. For example, we would apply pro rata consolidation to joint ventures between partners of

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comparable capacity and willingness to support for their respective strategic reasons. Even in cases that do not call for analytical consolidation, we presume there will be additional investment in the non-recourse entity, i.e., the money the company likely would spend to provide support or bail out the unit in which it invested.

No single factor determines the analytical view of the relationship with the affiliate; rather, several factors, taken together, will lead to one characterization or another, including:

- Strategic importance—integrated lines of business or critical supplier;
- Percentage ownership (current and prospective);
- Management control;
- Shared corporate name;
- Domicile in same country;
- Common sources of capital and lending relationships;
- Financial capacity for providing support;
- Significance of amount of investment;
- Investment relative to amount of debt at the venture or project;
- Nature of any other owners (strategic or financial; financial capacity);
- Management's stated posture;
- Track record of parent company in similar circumstances;
- The nature of potential risks;
- Shared collective bargaining agreements; and
- Jurisdiction's bankruptcy-law regime.

Adjustment procedures

There is no standardized adjustment, given the multiple fact patterns and subjective nature relating to subsidiaries/projects/joint ventures. As explained above, some consolidated entities—and their liabilities—might be deconsolidated, while some nonconsolidated entities may be consolidated.

Another possible adjustment is pro rata consolidation. This approach is not used too frequently, and typically applies only when both owners have similar financial profiles and motivations with respect to a joint venture.

Note that even in cases where we conclude that the liability will not ultimately be sup-

ported, we could well expect that the owner would extend partial support to the venture or subsidiary, including additional investments to attempt to rescue it. We would try to size such additional expenditures—and impute that amount as debt to the parent.

(Please see *"Corporate Ratings Criteria,"* 2006 edition: *Parent/Subsidiary Links*, and *"Credit FAQ: Knowing The Investors In A Company's Debt And Equity,"* published April 4, 2006, on *RatingsDirect*.)

Nonrecurring items/noncore activities

We typically make adjustments to a company's reported operating income and cash flow to remove items we consider nonrecurring and include those we consider recurring, so the historical financial ratios will be more indicative of future performance. These adjustments cover items including discontinued operations; effects of natural disasters; gains or losses on asset sales and sale/leasebacks; and one-time charges for asset write-downs, restructurings and plant shutdowns.

We review each potential nonrecurring item, and determine whether to adjust for it. Our view of these items may differ from the company's view, as presented in financial statements or footnotes.

We may view some supposedly one-time restructurings as ongoing for a particular company. Taking such a view may reflect a company's history of recurring restructuring charges, or the perceived need to address either company-specific or industry-wide competitive issues (for example, the need to move facilities offshore in order to be cost competitive).

We may also view certain other items that company management characterizes as one-time items as normal operating costs: In the retail industry, we do not typically view inventory write-downs or high store pre-opening costs from a rapid expansion program as unusual items.

In a similar vein, we often distinguish between a company's core business activity and other, ancillary activities—especially if there is some question about the latter's sustainability. A manufacturer may earn money from trading activity; it may even set up its

treasury operations as a profit center, but we may isolate, reclassify, and separately analyze the results of those operations.

For income derived from the sale and licensing of corporate assets, we similarly distinguish between sustainable, ongoing sales and those that are more opportunistic. Ancillary activities can distort measures of core operating performance, and peer analyses that rely on comparability of data, unless adjustments are made. An analogy can be drawn to the analytical segregation of non-homogenous activity. Some GAAP rules may require consolidation if a company owns both manufacturing and finance subsidiaries: We would separate the two for analytical purposes.

These adjustments require an appreciation of industry-specific contexts. For example, in the high-technology industry, companies dedicate substantial amounts of capital to research and development efforts and accumulate intellectual property in the form of patents, trade secrets, domain names, etc., which may be sold or licensed to complement revenues generated from core operations.

We consider revenue generated from the licensing of intellectual property to be a part of operating income, and therefore a component of EBITDA, because this arrangement allows for a relatively predictable, recurring source of revenue. However, revenue generated from the sale of intellectual property is not considered part of operating income. While there may be advantages in selling intellectual property, rather than licensing—e.g., the receipt of greater upfront proceeds or the elimination of future responsibilities—this arrangement normally is treated as non-operating income.

In other situations, the sale of assets may be considered recurring. For example, companies that lease or rent automobiles or industrial equipment routinely and periodically dispose of these assets via auctions and/or other sales.

Adjustment procedures

Data requirements

- Amounts of income, expense, and cash flows to be reclassified (including nonrecurring items reported as operating, and

recurring items not reported as operating). These amounts are judgmentally determined, based on information disclosed and our assessment.

Calculations

- Add or subtract amounts from respective measures, (e.g., revenue, operating income before and after D&A; D&A; EBIT; EBIT-DA; operating cash flows and FFO) to reclassify as appropriate. Because operating cash flows and FFO are post-tax measures, they also are adjusted to reflect the tax effects, where feasible.
- Beyond the standard adjustment, additional insights may be gleaned by adjusting individual line items within cost of goods sold or selling, general, and administrative (SG&A) expense, if there is sufficient data to reflect adjustments at such levels. Similarly, ancillary activities data are segregated and separately analyzed, to the extent practicable with available data.

Operating leases

Companies commonly use leasing as a means of financing. The accounting for leases distinguishes between operating and finance leases. Finance leases (also referred to as capital leases) are accounted for in a manner similar to a debt-financed acquisition of an asset, while many operating leases are reflected in the accounts on a pay-as-you go basis. We view the accounting distinction between operating and capital leases as substantially artificial. In both cases, the lessee contracts for the use of an asset, entering into a debt-like obligation to make periodic rental payments.

Our lease adjustments seek to enhance comparability of reported results (both operating and financial) and financial obligations among companies whether they lease assets under leases accounted for as operating or financing leases, or use debt to finance asset acquisition. The operating-lease-adjustment model is intended to bring companies' financial ratios closer to the underlying economics and more comparable, by taking into consideration all financial obligations incurred, whether on or off the balance sheet. The model improves our analysis of how profitably a company employs its leased and owned assets.

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Our model does not fully replicate a scenario in which a company acquired an asset and financed it with debt; rather, our adjustment is narrower in scope: It attempts to capture only the debt equivalent of a company's lease contracts in place. For example, when a company leases an asset with a 20-year productive life for five years, the adjustment picks up only the payments relating to the contracted lease period, ignoring the cost of the entire asset that would have been purchased—and depreciated—by a company that chose to buy instead of lease. We have chosen not to use alternative methodologies that capitalize the entire asset because they entail various data and interpretation challenges. In cases where the company has an economic need to use the asset for longer than the lease term, we take account of this qualitatively; however, if the lease is viewed as artificially short, and there is adequate information, such as for sale/leaseback transactions, we capitalize the entire sale amount.

Adjustment procedures

Data requirements

- Minimum lease payments: Noncancelable future lease payment stream (and residual value guarantees if not included in minimum lease payments); discount factor; annual lease-related operating expense for the most recent year; and deferred gains on sale leaseback transactions that resulted in leases accounted for as operating.
- Future-lease payment data are found in the notes to the financial statements. Annual payments for the coming five years (itemized by year) and the aggregate amount for subsequent years are provided under U.S. GAAP. Our model assumes that future payments for years beyond the fifth year approximate the fifth-year amount. Under IFRS, companies are permitted to disclose amounts payable in years two through four in a single combined amount, instead of disclosing separate amounts for each of the next five years. In this case, we assume a flat level of payments in years two through four, based on the total minimum lease payment disclosed for these three years. This approximation—caused by the limited

disclosure—does not capture how future payments may decline in these years.

Future lease payments are considered net of sublease rental only when the lease and sublease terms match, and the sub-lessee is sufficiently creditworthy.

- The discount factor is determined in one of the following ways: ideally, the imputed discount rate associated with the lease would be used, but rarely is available, and unlikely to be available for all companies in an industry; use the average rate on the company's secured debt; and/or use a rate imputed from the company's total interest expense and average debt.
- Annual operating-lease-related expense is sometimes available in the notes and will be used. When the amount is not separately disclosed (e.g., when presented with contingent rent and other amounts, or incorporated with other costs), it is estimated using the average of the first projected annual payment at the end of the most recent and prior year.

Calculations

- Debt: The present value of the payment stream, determined using the discount factor, is added to debt. (Lease debt is not tax-effected because its taxes will never reflect the analytical construct underlying our adjustment. The company is, in fact, getting the tax treatment afforded to leases—assuming GAAP and tax treatment as operating lease is the same. The actual tax amounts are those included in the accounts—and generally require no adjustment. This contrasts with PRB and ARO adjustments—which may be tax-effected. Those adjustments are based on the anticipation that tax-deductible recognition of the obligations will ultimately be required.)
- Operating income and cash flow measures: The operating-lease-related expense is apportioned to interest and depreciation components, as described below. The effect is to increase operating income measures: SG&A—by the entire amount of the expense; EBIT—by the implicit interest portion; EBITDA—by the implicit interest portion; and FFO—by the implicit depreciation portion. In addition, operating

income would be adjusted to reverse gain or loss on sale/leaseback transactions.

- Interest expense: Interest expense is increased by the product of the discount rate multiplied by the average first-year projected payment for the current and previous years.
- Depreciation: Operating-lease depreciation, i.e., the operating-lease-related expense amount less the calculated lease interest, is added to depreciation expense. (We deliberately calculate EBITDA without adding back the imputed depreciation component, despite the apparent definitional conflict. The cash flow characteristics of leasing do not neatly conform with the alternative of borrowing to acquire—even though our adjustment attempts to equate them. Lease payments represent ongoing cash outflows—quite different than depreciation, or even amortization of asset acquisition-related debt.)
- Capital expenditures: Capital expenditures are increased by an implied amount calculated as the year-over-year change in operating lease debt plus annual operating lease depreciation. This amount cannot be negative. Capital expenditures are also adjusted in the same fashion for capital leases.
- Property plant & equipment: Operating lease debt is added to PP&E to approximate the depreciated asset cost.

Postretirement employee benefits/deferred compensation
Defined-benefit obligations for retirees, including pensions and health care coverage (collectively referred to as PRB), and other forms of deferred compensation are financial obligations that must be paid over time, just as debt must be serviced, so we include them in debt ratios. A company may pre-fund the obligation or part of it (and companies often do pre-fund their pension obligations), which offsets the financial burden. Our objective, therefore, is to reflect the level of underfunding of defined-benefit pension obligations, as well as typically not-funded health care obligations and retiree lump-sum payment schemes, and other forms of deferred compensation. In arriving at adjusted financial measures, we must undo accounting short-

comings that affect balance sheets, cash flow statements, and income statements (under most current GAAP). The adjustments pertain to obligations already incurred, without trying to capture future levels of liability.

When PRB obligations constitute a major rating consideration, we delve more deeply into the company's particular circumstances and its benefits plans. Also, for some companies, funding and liquidity considerations surrounding retiree obligations can be much more important to the credit profile than imputing debt to the financial ratios. This situation typically pertains to speculative-grade companies that tend to have fewer available resources for cash requirements, including meeting mandated funding of PRB obligations.

We do not include in debt any amounts for defined-contribution plans, because they entail no obligations or risks to the sponsor related to past services beyond the current period's payments. We also have a slightly different position regarding multi-employer plans, not otherwise dealt with here. (See *Standard & Poor's Approach To Analyzing Employers' Participation In U.S. Multi-Employer Pension Plans*, published May 30, 2006, on RatingsDirect.)

A key difference between debt and PRB obligations is the inherent measurement uncertainty, as the benefits and related assets, to the extent they are funded, are variable. Quantifying PRB obligations relies on numerous assumptions, including:

- Employee turnover rates and length of service, according to which benefits vary;
- Mortality rates and dependency status/longevity assumptions, as the employee and his/her dependents' lifespan determine how long the benefit will be paid;
- Future compensation levels, to the extent wages prior to retirement are a factor in determining the amount of the benefit;
- Health care cost inflation, use, and delivery patterns; and
- Discount rate assumptions required to calculate a present value of the future required cash outflows.

Standard financial adjustments cannot easily factor in deviations from normal assumptions on these measurement drivers. However, for some factors, the analysis can, at least,

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gauge the sensitivity to changes in those assumptions. For example, a rough rule of thumb is that for each percentage point increase or decrease in the discount rate, the liability decreases or increases by at least 10%, and often by 15%-20%. (The more mature the plan, or the higher the market interest rates, the lesser the impact.)

To simplify the numerical analysis, we combine all retiree benefit plan assets and liabilities, for pension, health, and other obligations, netting the positions of a company's plans in surplus against those that are in deficit.

In theory, and over the long term, companies with multiple plans should be able to curtail contributions to over-funded plans and redirect contributions to under-funded plans. In the near term, however, funding surpluses are often hard to tap—and may have adverse tax consequences if drawn—even while cash contribution requirements may be onerous on other, under-funded plans. But, if meeting near-term cash requirements is an important issue for a particular company, its credit profile likely will be driven by liquidity considerations, while debt ratio levels would be of secondary importance.

We focus on the measure of the obligation that reflects a going-concern view. For example, under U.S. GAAP for pensions, this is the projected benefit obligation (PBO), or an equivalent actuarial measure of the ultimate liability. The going-concern view of the company includes the effect of expected wage increases if the benefit attributable to past employment services is tied to employee compensation according to some formula. However, for collectively bargained labor contracts, the PBO does not take account of expected wage increases beyond the term of the existing contract.

We do not use the accumulated benefit obligation (ABO), which takes into account only the benefits payable upon plan termination at period end, or the vested benefit obligation (which is no longer disclosed under U.S. GAAP), because they reflect a shutdown value perspective, rather than an ongoing firm perspective. Similarly, in the U.K., we do not focus on the value of beneficiaries' claims based on a full buyout basis

(i.e., based on the price prevailing on the annuity market, where demand is currently insufficiently covered by supply), which often considerably exceeds the amount equivalent to PBO under IFRS or U.K. GAAP. (The ABO and full buyout value are more appropriate measures in our recovery and subordination analyses.)

For other postretirement obligations—including medical liabilities, we use a measure equivalent to the pension PBO. For example, under U.S. GAAP, this is the accumulated postretirement benefit obligation (APBO).

We tax-effect our PRB adjustments—unless the related tax benefits have already been, or are unlikely to be, realized. We use the rates applicable to the company's plans, or, if this is unavailable, the current corporate rate—even while recognizing that fiscal reality may be more complex or dynamic as the company's fortunes change over time. In the typical situation, the company has credible prospects of generating sufficient future taxable income to take advantage of PRB-related deductions and reduce future tax payments. When a company's ability to generate profits is indeed dubious, we would not tax-effect. Moreover, in such cases, the company likely would be so pressured that liquidity—rather than capitalization or coverage levels—would be the overriding analytical focus.

Capital structure

We adjust capitalization for PRB effects by adjusting both debt and equity, where applicable. Debt is grossed up by the company's tax-effected unfunded PRB obligation. Equity is adjusted by the difference between the amount accrued on the corporate balance sheet and the amount of net over/under-funded obligation (net surplus/deficit), net of tax.

Companies following U.S. GAAP recently adopted SFAS 158, and record the unfunded PRB obligation on their balance sheets; companies following IFRS have the option to fully recognize actuarial gains and losses on their balance sheets. Accordingly, our equity adjustment is no longer required in many instances.

Debt is not adjusted down for net surpluses, so net over-funding (surplus) leaves debt

unchanged. Equity can be adjusted up (if the net recognized asset is less than the pre-tax surplus) or down. We do not split the debt adjustment between short- and long-term.

While the surplus is not treated as a cash equivalent, it nonetheless can be of value, especially to obviate future contributions. Sometimes it becomes evident that the amount is unrecoverable or cannot be used to offset future contributions. Given inconsistent accounting disclosure regarding the recoverability of surpluses, we rely on inquiries to company management.

Cash flow

We try to identify catch-up contributions made to reduce unfunded obligations, which would artificially depress reported operating cash flows. We view these contributions as akin to debt amortization, which represents a financing, rather than an operating cash flow. Specifically, cash paid (plan contributions plus benefits paid directly to beneficiaries) exceeding the sum of current-period service and net interest costs (that is, interest cost net of actual or expected returns on plan assets) is added back to FFO on a tax-effected basis. We look at actual investment returns for the period and returns normalized for potentially nonrecurring, unusually high or low performance.

Conversely, if the company is funding postretirement obligations at a level substantially below its net expense (service cost and net interest cost), we interpret this as a form of borrowing that artificially bolsters reported cash flow from operations.

In order to appropriately interpret adjusted numbers, note that our cash flow adjustment:

- Reallocates to the period certain costs (service and interest) that often differ from the cash impact in the period;
- Ignores prior service costs and other items such as curtailments, settlements and special termination benefits, and foreign-exchange variations;
- Ignores any income or charge (whether through income-statement or directly recognized into equity) that reflected the recognition of actuarial gains and losses; and
- Until early 2006, was capped at zero (no longer the case).

Income statement

In analyzing profitability (including operating profit and EBITDA), we disaggregate the benefits-cost components that may be lumped into operating income and expenses, allocate the amounts to operating and financial components, and eliminate those components we believe have no economic substance. The period's current service cost—reflecting the present value of future benefits earned by employees for services rendered during the period—is the sole item we keep as part of operating expenses.

The components, if any, that represent accounting artifacts and stem from the smoothing approach of the accounting rules—e.g., amortization of variations from previous expectations regarding plan benefits, investment performance, and actuarial experience—are eliminated from our income measures. As a result of these adjustments, pre-tax and after-tax income no longer match reported amounts.

Interest expense, which results from applying the discount rate to the beginning-of-period obligation to accrete the liability with the passage of time for the reporting period, is essentially a finance charge—and is reclassified as such, if reported differently.

The expected return on plan assets represents management's subjective, long-range expectation about the performance of the investment portfolio; in some accounting systems—such as U.S. GAAP—it may be applied to a smoothed, market-related value, rather than the fair-market values of the assets. We may choose instead to apply a standardized return, to gauge what multiyear average returns can be expected. We note the risks in the asset mix, but only subjectively. (In the future, we may find a way to reflect the risk profile of the portfolios in a more quantitative manner.)

Either way, the return on plan assets is netted against PRB-related interest expense up to the amount of the interest expense reported, but not beyond, as the economic benefits to be derived from such overage are limited. If, however, the actual return is negative, the full amount is treated as an addition to interest expense because the

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resulting economic detriment to the company is quite tangible.

Adjustment procedures

Data requirements

For the income and cash flow adjustments, amounts for the period of:

- Service cost;
- Interest cost;
- Expected return on plan assets;
- Actual return on plan assets;
- Actuarial gains/losses (amortization or immediate recognition in earnings);
- Prior service costs (amount included in earnings);
- Other amounts included in earnings (e.g., special benefits, settlements/curtailments);
- Total benefit costs; and
- The sum of employer contributions and direct payments made to participants.

For the balance-sheet adjustments:

- PRB-related assets on the balance sheet, including intangible assets, pre-paid or noncurrent assets, or any other assets;
- PRB-related liabilities on the balance sheet, including current and noncurrent liabilities;
- PRB-related deferred tax assets (or tax rate applicable to PRB costs);
- Fair value of plan assets; and
- Total plan obligations.

Note: Relevant pension and other postretirement benefit amounts are combined for all plans.

Calculations

Income-statement adjustments include adjustments to expenses and interest.

- Total PRB costs charged to operating income, less the service cost, yields the PRB adjustment to operating income. This is added to operating income before and after D&A, EBIT, and EBITDA.
- Interest cost less the expected return is PRB interest. In some cases, we may adjust expected returns to normalize it at a more realistic level. If net PRB interest is a cost, we include it in adjusted interest expense (we do not reduce interest expense if expected returns exceed interest cost). This PRB interest is added to reported interest when the net benefit costs are included in operating income. If reported interest already includes an interest component for

PRBs (e.g., as may be the case under IFRS), we adjust it, if necessary, to ensure it reflects the amount of PRB interest cost. A similar calculation is made using the actual, rather than expected, return on plan assets.

The adjustment to funds from operations starts with a calculation of excess contributions or PRB borrowing:

- Total employer contributions (including direct payments to retirees), less service costs, less interest costs, plus expected return yields the excess contribution, if positive, or PRB borrowing, if negative. (A similar calculation is made using actual, rather than expected return.)
- The excess contribution or PRB borrowing is reduced by taxes at the rate applicable to PRB costs. That is, the amount is multiplied by $(1 - \text{tax rate})$ to create the PRB adjustment to FFO.
- The excess contribution on PRB borrowing is added or subtracted to or from FFO.

The balance-sheet adjustments affect assets, debt, and equity.

- Plan obligations less assets equals the net pension and postretirement funded status (deficit or surplus).
- The net balance sheet asset (liability) position is determined as the balance sheet assets less liabilities. For the adjustment to debt, if net pension and postretirement funded status is a surplus, debt is not adjusted. If the net pension and postretirement is a deficit, this amount is reduced by the expected tax shield, that is, the amount is multiplied by $(1 - \text{tax rate})$.
- In some jurisdictions, the tax benefit is realized in advance of funding the deficit or paying benefits, for example, when the liability is accrued for tax purposes. The expected tax shield used in our calculation only takes into account amounts that have not yet been received. The adjustment to equity also considers existing balance sheet amounts.
- Equity is adjusted for the tax-effected difference between the deficit/surplus and the net balance sheet assets/liabilities, i.e., multiplied by $(1 - \text{tax rate})$.

Unlike the adjustment to debt, the adjustment to equity can be an increase or decrease.

(Please see "Corporate Ratings Criteria," 2006 edition: Postretirement Obligations; and "Ratings Implications Of New FASB Standard On Pensions And Other Postretirement Benefit Obligations," published Sept. 29, 2006, on RatingsDirect.)

Power purchase agreements

We view purchased power supply agreements (PPAs) as creating fixed, debt-like, financial obligations that represent substitutes for debt-financed capital investments in generation capacity. In a sense, a utility that has entered into a PPA has contracted with a supplier to make the financial investment on its behalf. Consequently, by adjusting financial metrics to incorporate PPA fixed obligations, we achieve greater comparability of utilities that finance and build generation capacity and those that purchase capacity to satisfy customer needs.

PPAs do benefit utilities by shifting various risks to the suppliers, such as construction risk and most of the operating risk. The principal risk borne by a utility that relies on PPAs is the recovery of the costs of the financial obligation in rates. Differentiating the risk profiles of utilities that take divergent approaches is incorporated in our qualitative business-risk assessments.

We calculate the present value (PV) of the future stream of capacity payments under the contracts as reported in the financial statement footnotes, or as supplied directly by the company. The discount rate used is equivalent to the company's average cost of non-securitization debt. For U.S. companies, notes to the financial statements enumerate capacity payments for the coming five years, and a thereafter period. We often have access to company forecasts that show the detail underlying the thereafter amount; otherwise, we divide the amount reported as thereafter by the average of the capacity payments in the preceding five years to derive an approximation of annual payments after year five.

In calculating the amount we add to debt, we also consider new contracts that will commence during the forecast period. Such contracts are not reflected in the notes to the financial statements—but information regard-

ing these contracts may be provided to us by the company.

If these contracts represent extensions of existing PPAs, they are immediately included in the PV calculation. However, a contract sometimes is executed in anticipation of incremental future needs, so the energy will not flow until some later period and there are no interim payments. In these instances, we incorporate that contract in our projections, starting in the year that energy deliveries begin under the contract, just as if the company had purchased a plant at that juncture. That way, the debt imputation is viewed in the context of all the related activity, including revenues and cash flow from the forecast demand. (Of course, the projected PPA debt is included in projected ratios. That way, the future PPA figures as a current rating factor, even if it is not included in the current-year ratio calculations.)

The calculated PV is adjusted to reflect the benefits of regulatory or legislative cost recovery mechanisms. The adjustment reduces the debt-equivalent amount by multiplying the PV by a specific risk factor that pertains to each contract. The stronger the recovery mechanisms, the smaller the risk factor. These risk factors typically range between 0% and 50%, but can be as high as 100%.

A 100% risk factor would signify that substantially all risk related to contractual obligations rests on the company, with no mitigating regulatory or legislative support. For example, an unregulated energy company that has entered into a tolling arrangement with a third-party supplier would be assigned a 100% risk factor. Conversely, a 0% risk factor indicates that the burden of the contractual payments rests solely with ratepayers. This fact pattern frequently is found among regulated utilities that act as conduits for the delivery of a third party's electricity, and essentially deliver power, collect charges, and remit revenues to the suppliers. These utilities typically have been directed to divest their generation assets; are barred from developing new generation assets; and the power supplied to their customers is sourced through a state auction or third parties that act as intermediaries between retail customers and electricity suppliers.

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Intermediate degrees of recovery risk are presented by a number of regulatory and legislative mechanisms. For example, we employ a 50% risk factor in cases where regulators use a utility's rate case to establish base rates to provide for the recovery of the fixed costs created by a PPA. While we view this type of mechanism as generally supportive of credit quality, the utility still needs to obtain approval to recover costs and the prudence of PPA capacity payments in successive rate cases to ensure ongoing recovery of its fixed costs. If a regulator has established a power cost adjustment mechanism that recovers all prudent PPA costs, a risk factor of 25% is employed, because the recovery hurdle is lower than it is for a utility that must litigate time and again its right to recovery costs.

In certain jurisdictions, true-up mechanisms are more favorable and frequent than the review of base rates, but still do not amount to pure fuel adjustment clauses. Such mechanisms may be triggered by financial thresholds or passage of prescribed periods of time. In these instances, a risk factor between 25% and 50% is employed.

Legislatively created cost-recovery mechanisms are long-lasting and more resilient to change. Consequently, such mechanisms lead to risk factors between 0% and 15%, depending on the legislative provisions for cost recovery and the supply function borne by the utility. Legislative guarantees of complete and timely recovery of costs are particularly important to achieving the lowest risk factors.

We do not impute debt for supply arrangements if a utility acts merely as a conduit for the delivery of power. As an example, New Jersey's vertically integrated utility companies were transformed into pure transmission and distribution utilities. The state commission, or an appointed proxy, leads an annual auction in which suppliers bid to serve the state's retail customers, and the utilities are protected from supplier default. The state's utilities merely deliver power and collect revenues from retail customers on behalf of the suppliers. Therefore, we impute debt only to New Jersey utilities' qualifying facility and exempt wholesale generator contracts—and not for other electricity supply contracts where the utilities merely act as conduits between the

winners of the regulator's supply auction and the end-user, retail customers.

We also exclude PPAs with durations of less than one year where they serve merely as gap fillers, pending either the construction of new capacity or the execution of long-term PPA contracts. These contracts are temporary—and we focus on the more permanent situation, which is factored into the forecast ratios.

Given the long-term mandate of electric utilities to meet their customers' demand for electricity, and also to enable comparison of companies with different contract lengths, we use an evergreening methodology. Evergreen treatment extends the duration of short-and intermediate-term contracts to a common length of around 12 years. To quantify the cost of the extended capacity, we use empirical data regarding the cost of developing new peaking capacity, incorporating regional differences. The cost of new capacity is translated into a dollars-per-kilowatt-year figure using a proxy weighted average cost of capital and a proxy capital recovery period.

Some PPAs are treated as operating leases for accounting purposes—based on the tenor of the PPA or the residual value of the asset upon the PPA's expiration. We accord PPA treatment to those obligations, in lieu of lease treatment, if companies identify them to us. That way, such PPAs will not be subject to a 100% risk factor for analytical purposes as though they were ordinary leases; rather, the PV of the stream of capacity payments associated with these PPAs is reduced to reflect the applicable risk factor. (PPAs treated as capital leases for accounting purposes do not fall under our PPA adjustment.)

Long-term transmission contracts can also serve in lieu of building generation, and, accordingly, fall under our PPA methodology. In some cases, these transmission contracts provide access to specific power plants, while other transmission arrangements provide access to competitive wholesale electricity markets. We view these types of transmission arrangements as extensions of the power plants to which they are connected or the markets that they serve. Accordingly, we impute debt for the fixed costs associated with such transmission contracts.

Adjustment procedures

Data requirements

- Future capacity payments obtained from the financial statement footnotes or from management.
- Discount rate: the company's cost of nonsecuritized debt.
- Analytically determined risk factor.

Calculations

- Balance-sheet debt is increased by the PV of the stream of capacity payments multiplied by the risk factor.
- Equity is not adjusted, because the recharacterization of the PPA implies the creation of an asset, which offsets the debt.
- PP&E and total assets are increased for the implied creation of an asset equivalent to the debt.
- An implied interest expense for the imputed debt is calculated by multiplying the utility's average cost of nonsecuritized debt by the amount of imputed debt (or, average PPA imputed debt, if there is fluctuation of the level), and is added to interest expense.
- The cost amount attributed to depreciation is reclassified as capex, thereby increasing operating cash flow and FFO.
- We impute a depreciation component to PPAs. The depreciation component is derived by multiplying the relevant year's capacity payment by the risk factor and then subtracting the implied PPA-related interest for that year. Accordingly, the impact of PPAs on cash flow measures is tempered.
- Some PPA contracts refer only to a single, all-in energy price. We identify an implied capacity price within such an all-in energy price, to calculate an implied capacity payment associated with the PPA. This implied capacity payment is expressed in dollars per kilowatt-year, multiplied by the number of kilowatts under contract. (In cases that exhibit markedly different capacity factors, such as wind power, the relation of capacity payment to the all-in charge is adjusted accordingly.)
- Operating income before D&A and EBITDA are increased for the imputed interest expense and imputed depreciation component, the total of which equals the entire amount paid for PPA (subject to the risk factor).

- Operating income after D&A and EBIT are increased for interest expense.

(Please see "Standard & Poor's Methodology For Imputing Debt for U.S. Utilities' Power Purchase Agreements," Published May 7, 2007, and "Credit FAQ: Imputed Debt Calculation For U.S. Utilities' Power Purchase Agreements," published March 30, 2007, on RatingsDirect.)

Share-based compensation expense

We view the value of equity instruments (for example, stock options and restricted shares awards) granted to employees and/or other service providers as an outlay that should be taken into account in evaluating issuers' performance and profitability. When we assess a company's ability to generate a real, all-in return on capital employed, we should not view differently companies granting equity from peers using cash as a form of compensation. Although often not representing a direct or an immediate call on a company's cash resources, these grants are made in exchange for, or in anticipation of, services to be provided: They have a real economic value and so should be considered.

In analyzing the financial aspects of equity awards granted by an issuer, we consider adjustments to:

- Normalize the value of these grants in calculating earnings and performance-based metrics. That is, certain accounting regimes mandate expensing of stock-based grants while others do not. In addition, certain practices employed by management, such as vesting acceleration and other award modifications, could meaningfully affect reported results. Accordingly, certain adjustments may be warranted for more meaningful peer and period-over-period comparisons.
- Highlight the effect that these arrangements might have over time on cash flows. That is, although most awards do not result in cash being exchanged upon grant, future cash flows are clearly affected. This occurs as a result of payments received by the company upon exercise or issuance of shares; payments made by the company for share repurchases (to mitigate EPS dilution); a company's practice to settle the value of equity grants in cash in lieu of

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shares; and tax savings generated by the favorable tax treatment generally afforded to options and other grants.

- Separately, we try to ascertain the effectiveness of a company's grants in aligning employee incentives with shareholders' and creditors' objectives.

Until recently, the major accounting regimes (e.g., IFRS, U.S. GAAP, Canadian GAAP, and Australian GAAP) did not mandate expensing of these costs. Now most require the fair value of equity-based grants (or an approximation of that value) to be included as an expense in the income statement. This amount is generally expensed over the benefiting period, i.e., the period the employee is assumed to provide services in exchange for the award. Often the vesting period is used as a proxy. Prior to the advent of IFRS and the recent mandating of expensing under U.S. GAAP for all stock-based grants, the accounting was greatly fragmented and inconsistent among companies and jurisdictions, and also varied according to the form of the award. For example, although restricted shares or stock appreciation rights may be economically equivalent to stock option grants, the accounting differed. Further, disclosures of stock-based compensation arrangements, which were lacking in the past, have vastly improved as a result of governance and transparency requirements by accounting-standard setters, securities regulators, and exchanges, providing more pertinent data on these arrangements.

Profitability analysis

Our objective is to capture compensation cost in our profitability measures—regardless of the means of payment (i.e., whether paid in cash, shares, options or other in-kind payment)—as fully and as consistently as possible.

With the recent accounting changes, most rated companies now expense the cost of equity-based grants, so the consistency of reported earnings is significantly enhanced, obviating in many cases the need to define a different common basis for analysis. However, where information enabling quantification is not available, we employ a qualitative assessment, to be conscious of the difference among peers.

Companies may, at times, modify their share-based awards, grant a one-time award (e.g., upon an acquisition), or accelerate vesting (e.g., upon a change in control or downsizing). These actions could meaningfully alter reported income and introduce discrete volatility to earnings. However, adjustments for these variants generally are not feasible as a practical matter, and are attempted only where material and the relevant information is available.

Cash-flow analysis

When a company grants share-based awards, generally no cash is paid or received. Cash-flow consequences, if any, only arise when the options are exercised (e.g., as a result of payment of the exercise price and from associated tax benefits). For some other grants, such as stock appreciation rights (SARs) payable in shares and restricted share grants, no cash changes hands at all. Just as with all issuance of equity, the company's financial position is enhanced, or at least is not diminished, as a result of the grant (assuming settlement is effected with shares, and the grant/exercise is not tied to commensurate repurchases). From a cash-flow standpoint, companies would gain flexibility to the extent that stock-based grants provide an alternative to cash compensation and their creditors should be better off, while their shareholders will be diluted.

Our cash-flow measures, such as FFO and OCF, are not affected by share-based grants. Being a non-cash item, share-based related expense will continue to be backed out on the cash flow statement. Because options and restricted share grants represent non-cash events, our key cash flow ratios—FFO to total debt, EBITDA to interest, and debt to EBITDA—exclude stock option expense. Accordingly, for companies whose stock-based compensation expense (payable in shares) has been deducted, we adjust EBITDA measures by adding back the expense.

Unlike options or restricted share awards, certain other share-based arrangements are payable solely in cash (e.g., stock appreciation rights required to be settled in cash), and represent a future call on a company's cash

flow. The obligations under these arrangements are treated as debt.

For tax-reporting purposes, the exercise or the point of vesting (not granting) of certain stock-based awards often generates a tax-deductible expense, regardless of whether the company has been expensing stock-option grants for financial reporting purposes. Tax credits are shown as an operating item on the cash flow statement under U.S. GAAP only to the extent they relate to the accounting expense; if the tax deduction exceeds the amount attributable to the accounting expense, such excess is a financing item. Analytically, we view tax benefits more appropriately as a financing item on the cash flow statement, since they are triggered only upon equity issuance.

To mitigate dilution caused by options and other share-related grants, companies often engage in share repurchases. Arguably, if a company regularly reverses the dilution resulting from the exercise of share-based awards through share repurchases, the related cash outlays (net of cash proceeds from the exercise) could be treated as a cash operating expense. However, we view a company's decision to repurchase its shares as a separate matter—and part of the company's overall corporate finance strategy. Accordingly, we determine the level of expected share repurchases in the context of a broader assessment of liquidity, capitalization, and financial policy.

In contrast, when an issuer enters into derivative or similar contracts to repurchase shares at a future date, we view these contracts as precursors to such purchases—and incorporate the repurchase immediately in the analysis. Still, even in the absence of such contractual arrangements, the analysis incorporates the eventual share repurchases if they are anticipated. We adjust debt by adding amounts that are anticipated as necessary to fund these transactions.

Additional considerations

For U.S. tax purposes, generally the exercise (not granting) of certain stock options results in a tax-deductible expense to the employer. However, for GAAP purposes, the company expenses the fair value of stock options,

which is determined at the grant date, ratably over the related service period. As a result of the use of the grant date fair value to determine the accounting expense, rather than an exercise-date intrinsic or other value for tax deduction purposes, the book and the tax expenses will differ. Furthermore, U.S. GAAP does not allow companies to record a reduction to income tax expense on their income statements for these excess tax benefits. Instead, the tax benefit is recorded directly as an incremental increase to equity (more specifically, additional paid-in capital) and a reduction of taxes payable (i.e., never recorded in as a benefit in the income statement). Consistent with our view that the tax benefits are more financing in nature, because they relate to equity issuance, this will not give rise to an adjustment.

If the options ultimately expire unexercised, any previously recorded accounting expense (recorded based on the award's initial fair value) is not reversed under U.S. GAAP. Although in this circumstance no tax deduction would be generated at all, it would result in a deferred tax asset being recorded on the company's balance sheet over the expense recognition period (because the book expense and resulting deferred tax assets are calculated based on the initial fair value). This tax asset is reversed through earnings only upon expiration of the exercise period. This requirement can cause large deferred tax assets, unlikely to be realized, to remain on a company's balance sheet, causing artificially inflated equity balance in circumstances in which a company's fortunes are adversely changing, and its options are moving substantially out of the money (rendering both exercise and use of the tax benefit improbable). Analytically, it would be more appropriate to reverse the asset amount against equity when it becomes apparent that use of the benefits is unlikely. Adjustments for these situations are considered only in rare circumstances.

Both IFRS and U.S. GAAP now require the expensing of stock options and other share-based employee compensation. However, to facilitate the transition from the prior approach of not expensing, the transition provision allows companies to apply this approach only

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to grants that were made after a specific date (e.g., Nov. 7, 2002, under IFRS). As a result, costs for an increasing proportion of outstanding grants will be expensed over time. We have generally not attempted to adjust earnings measures to include the missing expenses in the early years of the transition.

Adjustment procedures

Data requirements

- Total period share-based compensation expense reflected in the financial statements. (Amounts may be available in the statements or in the notes.)
- In jurisdictions that do not require expensing of such compensation, an estimate of what would be expensed.
- Amount of deferred taxes unlikely to be realized.
- Tax cash flows included in operating that we view as financing.
- Estimate of amounts to be used for share repurchases.

Calculations

- EBITDA: Where noncash stock compensation costs have been expensed, we reverse the expense amount.
- SG&A, Operating income before and after D&A, and EBIT: In jurisdictions where share-based compensation is not required to be expensed, the estimated amount is deducted from these profitability measures.
- Tax assets that are unlikely to be realized are subtracted from assets and equity.
- Taxes that are financing in nature are added to operating cash flow and FFO.
- Debt is increased—and equity decreased—for related share repurchases that are contractually committed or otherwise imminent.

(Please see "Analytic Implications Of Stock-Based Compensation Accounting," published March 24, 2005, and "Camouflaged Share Repurchases: The Rating Implications of Total-Return Swaps and Similar Equity Derivatives," published Dec. 7, 2000, on RatingsDirect.)

Stranded costs securitizations of regulated utilities

For rate-regulated utilities, we remove the effects of debt related to securitization of

stranded costs, to the extent that debt is serviced separately by the utilities' customers through direct inclusion in rates. Because the customers, not the utility, are responsible, by statute, for principal and interest payments, we remove the debt from the balance sheet for analytical purposes. We also remove related amounts from revenue, depreciation, and interest.

Adjustment procedures

Data requirements

- Amount of securitized debt related to stranded costs on the utility's balance sheet at period end;
- Interest expense related to securitized stranded-cost debt for the period; and
- Principal repayments on stranded-cost securitized debt during the period.
- Note: We obtain the data from the financial statements and footnotes of the utility; or separate special purpose vehicle (SPV) created for the debt securitization; or information received directly from the utility.

Calculations

- Adjustment to debt: We subtract the stranded-cost securitized debt from total debt.
- Adjustment to revenues: We remove the revenue earned from customers that is committed to paying securitized debt principal and interest from total revenues. We assume that revenue equals the sum of interest and principal payments made during the year.
- Adjustment to operating income before depreciation and amortization and EBITDA: We remove the revenue earned from customers committed to paying principal and interest on securitized debt.
- Adjustment to operating income after depreciation and amortization and EBIT: We remove the revenue earned from customers committed to paying principal and interest. We also remove depreciation and amortization related to the regulatory asset, which we assume equals the sum on principal payments during the period. As a result, the reduction to operating income after D&A is only for the interest portion.
- Adjustment to interest expense: We reduce interest expense by interest expense of the securitized debt.

- Operating cash flows: We reduce operating cash flows for revenues and increase for the assumed interest amount related to the securitized debt. This results in a net decrease to operating cash flows equal to the principal repayment amount.

(Please see "Securitizing Stranded Costs," published Jan. 18, 2001, on RatingsDirect.)

Surplus cash

The credit profile of companies that have accumulated cash is, of course, enhanced by the available liquidity. But our analytical methodology regularly goes a step further, by adjusting both financial and operating ratios to reflect a company's surplus cash (that is, unless the surplus is deemed to be only temporary).

Industrial credit ratios are intended to capture the degree to which a company has leveraged its risk assets, and highly liquid financial assets often involve virtually no risk. Moreover, ratios are designed to indicate a company's ability to service and repay debt obligations from operating cash flow, and surplus cash and/or highly-liquid assets are, in a sense, available to repay debt apart from ongoing cash flow generation. Accordingly, we often net surplus cash against debt and debt-like obligations—so that net debt is what figures in ratio calculations.

In some situations—only where the surplus cash is structurally linked to debt that would not be needed, were it not for the cash holdings—we also use a net interest expense when calculating the denominator of coverage ratios, such as FFO/interest, EBIT/interest and EBITDA/interest. (Absent such linkage, we use gross interest in the denominator. Also, since interest income is differentiated from operating income, it is generally not included in the numerator.)

Further, maintenance of surplus cash distorts operational benchmarks and return on assets (ROA) measures that are important for peer comparisons in some sectors, such as pharmaceuticals. Given the relatively low returns on low-risk financial assets, maintaining such assets depresses asset-related margins (even without taking into account interest expense required if the company is financing the cash with debt that otherwise would not be needed).

The key analytical considerations regarding net debt adjustments are the quality of the financial assets themselves, and the company's purpose and strategies for maintaining them—although doing so involves commensurately higher levels of debt. Some of the possible strategies—and what they imply for the permanence of the surplus—are discussed below.

Virtually all companies require some cash to facilitate their operations. Retailers, restaurants, and supermarkets, for example, need cash to make change. More broadly, companies require a certain level of cash for very-near-term liquidity. We do not give any special credit or make any adjustments for cash that is merely adequate to support ongoing operations, even though the amount can sometimes be quite substantial—especially for companies that operate numerous facilities, and those that transact in diverse currencies.

Companies engage in dialogue with us to help us gauge these near-term operating liquidity needs, and our sector comparisons and reviews also target peer consistency regarding maintenance of sufficient liquidity. Apart from potential netting for surpluses, maintaining adequate liquidity is always an important rating consideration. A company with a deficient level of cash for working capital needs would be penalized in its rating assignment.

However, many companies possess still greater cash, and/or liquid, low-risk, financial resources. Several different possible purposes and strategies could apply. This is important to our analytical treatment: There are many situations in which we use net calculations and, many others where we do not, usually determined by the company's strategies. The strategies explained below are in descending order, starting with the most supportive of a net approach and concluding with a number of strategies that do not lead to a net approach.

Strategies that support net-debt treatment

- Defeasance (both legal and economic).

Because the company places very high-quality assets in a trust to cover the interest and principal of a specific debt issue, this is the most obvious application of the net debt adjustment. (See "Defeasance Of

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Corporate Bonds May Be Gaining Popularity,” published July 25, 2006, on RatingsDirect).

- Tax arbitrage. Some companies manufacture in various tax havens; retain related profits in those low-tax locales and avoid tollgate taxes by holding financial investments there; while financing and incurring tax-deductible interest expense in higher-tax rate jurisdictions. Such structural basis for maintaining cash is another solid reason for applying the net debt adjustments. (However, for analytical purposes, any “tollgate” taxes payable upon repatriation are subtracted from the cash.) The large, cash-rich U.S. pharmaceutical companies offer a good example of this tax arbitrage strategy. And, given the magnitude of this aspect of these companies’ finances, profitability measures could be quite distorted without also adjusting return on asset ratios to a net basis. (See “Credit FAQ: Tax Relief On Foreign Cash And Its Special Benefit To U.S. Drug And Medical Device Firms,” published Sept. 14, 2004, and “Ratings Implications Of Earnings Repatriations Under The American Jobs Creation Act,” published June 26, 2006, on RatingsDirect.)
- Funding future payment of obligations—especially retiree obligations. Some companies may earmark financial assets on their balance sheet to provide for their retiree benefit obligations. In particular, some large German corporations assert that this is their financial policy. Indeed, while these assets are not legally segregated, we would view them as offsetting the liability. Application of the net debt approach in such cases presumes that the liability itself is sufficiently debt-like to be included in our definition of adjusted debt. (U.S., U.K., and Dutch companies, among others, are forced by law to fund their pension obligations in a trust. Our pension adjustment adds back only any unfunded portion, which is equivalent to netting these financial assets against the debt-like pension liability.)
- Meet seasonal requirements. A company may choose to pre-fund its intrayear borrowing needs, by borrowing (or not repay-

ing outstanding debt balances), holding the proceeds in cash or near-cash investments, drawing down the cash as the year progresses, and then replenishing it at period end. The company should not be penalized relative to a company that instead relies on borrowing only as the need actually materializes, thus avoiding the debt showing up on its yearend financial statements. (In both cases, there may be equal prudence, since the latter company would typically be able to rely on a revolving credit agreement.) To avoid such a distortion and promote comparability, we would use a net-debt approach. However, it would be tricky to estimate the impact on interest expense involved for this pattern, which is one reason we are reluctant to focus on net interest expense.

- Maintain access to financial markets. Very similar to the above strategy, some companies believe it is in their best interests to keep a fairly stable presence in the financial markets, especially in commercial paper markets. They maintain market presence on a regular basis, and avoid going in and out of the markets as their cash flow patterns would dictate.

Strategies that do not support net-debt treatment

- Cyclical safety net. Some companies tend to accumulate cash during good times, and hold onto it for self-preservation during expected lean years. For companies that have large ongoing capital requirements, this can be critical. The large U.S. auto companies offer a dramatic example. Similarly, high-technology companies tend to operate with a large cash cushion, given the vicissitudes of the technology product life cycles. Such cash is not really an offset to debt, and net debt is not used as the basis for analysis in these instances. (Nonetheless, it is hard to forecast how much cash is appropriately dedicated to spending in future downturns. So the analyst might calculate supplementary ratios based on netting, just to gain perspective and for peer comparison purposes.)
- Reserve for investment opportunities. Cash earmarked for investment in operations—

expansion or capital projects—or acquisitions does not qualify for netting against debt. The cash position is temporary, although some companies may take their time until the opportunity they seek arrives. Of course, having such cash to invest is a great positive that must not be overlooked; it figures in other aspects of the analysis: The potential additional cash flow that can be anticipated from enlarged operations is considered in financial projections, and the current availability of cash enhances liquidity.

- Awaiting return to shareholders. In the current financial environment, this situation may be the most common, at least in the U.S. Many companies that have been successful at generating surplus cash are motivated to repurchase stock or pay out special dividends. While shareholder enrichment programs may stretch out over several quarters or even a few years, the cash position of such companies is ephemeral, and should not be netted against debt.

There are many instances where the purpose may be mixed or the strategy unclear. Local business practice can then form the basis for deciding whether the cash position is likely to be long-lasting. Accordingly, companies with surplus cash that operate in the European context are regularly afforded net debt treatment, given the acceptance—even tradition—of companies operating permanently with surplus cash. (Whatever portion is deemed to be needed for operations is excluded from the adjustment.)

In contrast, North American companies operate in an environment that looks askance at cash accumulation. Shareholders expect these funds to be invested, or returned to them for reinvestment. We therefore presume that, in most cases, surplus cash will be distributed to shareholders sooner or later. Accordingly, few companies in North America are analyzed on a net-debt basis.

Some companies participate in global industries, and may be influenced, to some extent, by the behavior of cross-border peers. This could provide additional insight into what to expect in those instances.

A company's excess cash may be invested in assets of varying quality or liquidity. We

tend to be fairly conservative about which assets can be used to fully offset debt. However, a diversified portfolio of assets—such as traded equities, for example—can constitute a reasonably high quality investment, and is certainly very liquid. We have sometimes taken a net approach even with respect to nonfinancial assets, when they exhibit similar critical aspects of low risk and liquidity. For example, agricultural commodity and energy trading companies hold inventory against committed orders. Netting the value of these commodities against debt allows a better picture of the true credit risks.

To the extent that asset values may be subject to decline, we would haircut the investment prior to the netting adjustment. There are situations where we would not adjust for excess cash on the balance sheet because the company has only limited access to the funds. Such exceptions include:

- Funds held at partially owned subsidiaries. Joint-venture partners or minority shareholders may insist on maintaining significant liquidity at the subsidiary level, or may otherwise limit the repatriation of cash to the group's central treasury operations. Restrictive bank loan covenants at these units create similar restrictions.
- Operating subsidiaries that are regulated. These business units may be prevented from up-streaming cash to their parents, or may have to maintain substantial cash balances for regulatory reasons.
- Captive insurance subsidiaries. While cash appears unencumbered, it usually has to be invested in line with the subsidiary's insurance status and regulations.
- Pension funding vehicles. Even pension surpluses are generally regarded as inaccessible for all practical purposes.

Adjustment procedures

Data requirements

- The amount of surplus cash is judgmentally determined, based on our assessment of liquidity available to repay debt.
- Estimated taxes that would be subject to collection upon repatriation, if applicable.

Calculations

- Debt and cash and investments are reduced by the surplus cash amount, net of related

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taxes. However, the resulting debt amount may never be negative.

- If the cash and debt are structurally linked, interest expense is reduced by an amount that corresponds to earnings on the surplus cash.

(Please see "Net Debt Adjustments Reflect Asset Quality, Strategic Intent," published Feb. 22, 2007, on RatingsDirect.)

Trade receivables securitizations

Securitization is an important financing vehicle for many companies, often providing lower—cost, more diverse sources of funding and liquidity than otherwise available to the company. However, securitizations do not ordinarily transform the risks or the underlying economic reality of the business activity, and do not necessarily provide equity relief (i.e., that having accomplished a securitization, the issuer can retain less equity, or incur more debt, than otherwise would be the case, without any change in its credit quality).

To the extent the securitization accomplishes true risk transfer (i.e., all risks—contractual, legal, and reputational), the transaction is interpreted as an asset sale. Yet, in the much more common case, the company retains the bulk of risks related to the assets transferred, and the transaction is akin, in our view, to a secured financing. More importantly, perhaps, we do not give any benefit for securitization of assets that will be re-generated in the ordinary course of business (and financed on an ongoing basis).

Key considerations in assessing the extent of equity relief include:

- Riskiness of the securitized assets. The only risk that can be transferred is that which existed in the first place. If, as is often the case, an issuer securitizes its highest-quality or most liquid assets, that limits the extent of any meaningful equity relief.
- First-loss exposure. The issuer commonly retains the first-loss exposure, to enhance the credit protection afforded for the securitized debt. For the securitized debt to be highly rated, the extent of enhancement must be a multiple of the expected losses associated with the assets. The first-loss layer thus encompasses the preponderance of risk associated with the securitized assets, and the issuer's total realizations from the

securitization will vary depending on the performance of the assets. Often, only the risk of catastrophic loss is transferred to third-party investors—risk generally of little relevance in the corporate rating analysis.

- Moral recourse. How the company would behave if losses did reach catastrophic levels. Empirical evidence suggests companies often believe they must bail out troubled financings (for example, by repurchasing problematic assets or replacing them with other assets) to preserve access to this funding source and, more broadly, to preserve their good name in the capital markets, even though they have no legal requirement to do so. Moral recourse is magnified when securitizations are a significant part of a company's financing activity, or when a company remains linked to the securitized assets by continuing in the role of servicer or operator.
- Ongoing funding needs. Even if it were contractually and legally certain that the risks related to a given pool of assets had been fully transferred and the issuer would not support failing securitizations, equity relief (or an analytical deconsolidation) still would not necessarily have been achieved. If, for whatever reason, losses related to the securitized assets rose dramatically higher than initially anticipated, and if the issuer has a recurring need to finance similar assets, future access to the securitization market would be dubious—at least economically. Future funding needs would then have to be met by other means, with the requisite equity (and the equivalent level of borrowings) to support them. Thus, even if a company separately sells the first-loss exposures, or sells the entire asset without retaining any first-loss exposure, it would not achieve equity relief.

The accounting treatment of securitizations may not be congruent with our analytical perspective, and, accordingly, adjustments to the reported financials often are necessary (especially for companies reporting under U.S. GAAP, since many securitizations remain on-balance sheet under IFRS).

For transactions in which a company retains the preponderance of risks (including those related to ongoing funding needs), we calculate ratios where the outstanding

amount of securitized assets are consolidated, along with the related securitized debt—regardless of the accounting treatment. If securitization is used essentially to transfer risk in full and there are no contingent or indirect liabilities, we view the transaction as the equivalent of an asset sale. When necessary, then, we recast the assets, debt, earnings and cashflows, and shareholders' equity accordingly, including adjusting for deferred tax effects and imputed interest.

Issues/limitations of adjustments

When securitizations are accounted for as sales, they commonly give rise to upfront gain/loss-on-sale effects, which represent the present value of the estimated difference between the asset yield and the securitization funding rate and other securitization-related costs. For securitizations that we are putting back on the balance sheet, it is appropriate to back out such gains and spread them out over the life of the securitizations, given the uncertainty about whether the earnings will ultimately be realized as expected and their essentially non-recurring character. Losses that reflect the discount on sale are also backed out, to avoid double-counting the interest component of the transactions.

To impute interest, we generally have to approximate a rate, given the lack of precise information that is available. Since securitizations tend to be relatively well-secured and risk-free for the investor, we assume a rate that approximates the risk-free rate, currently 5%.

In theory, it might be desirable to fully recast the income statement, and consolidate off-balance-sheet securitizations, but as a practical matter, this is difficult to accomplish. Still, some companies have voluntarily included pro forma schedules in their public disclosures to enable such analysis.

Cash inflows or outflows related to working capital assets or liabilities, or finance receivables, are classified as operating in nature on the statement of cash flows under U.S. GAAP and IFRS. Hence, securitizations affect operating cash flow, with particularly significant effects possible in reporting periods when securitizations are initiated or mature. The reporting convention varies in line with the balance sheet classification. If

the securitization is consolidated, the related borrowings are treated as a financing activity. If the securitization is not consolidated, it is as if the assets self-liquidated on an accelerated basis: No debt incurrence is identified separately, either as an operating or financing source of cash. When our analytic view is that securitizations should be consolidated (or, in rare situations, when those that are consolidated should not be), it would be desirable to recast the statement of cash flow accordingly—to smooth out the variations in operating cash flow that can result from the sale treatment of the securitization, which can give a distorted picture of recurring cash flow. Again, as a practical matter, this often can be difficult to accomplish.

Adjustment procedures

Data requirements

- Identify the period-end amount and average outstanding amount of trade receivables sold or securitized, for which an adjustment is warranted, that are not on the balance sheet.

Calculations

- Debt and receivables are increased by the amount of trade receivables sold or securitized.
- Interest expense is increased by an amount of interest imputed at the risk-free discount rate.
- Operating cash flows are adjusted to remove the proceeds from the securitization when there is an increased level of securitization—upon initiation of securitization or subsequent fluctuation in amounts securitized. Merely rolling over existing securitization requires no cash flow adjustment.

(Please see "Securitization's Effect On Corporate Credit Quality," published Nov. 28, 2005, and "Finance Company Rating Methodology: Credit Ratios To Be Analyzed On A Managed Basis," published Feb. 23, 2001, on RatingsDirect.)

Volumetric production payments

A volumetric production payment (VPP) is an arrangement in which an exploration and production (E&P) company agrees to deliver a specified quantity of hydrocarbons from

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specific properties to a counterparty (often a financial institution) in return for a fixed amount of cash received at the beginning of the transaction. The seller often bears all of the production and development costs associated with delivering the agreed-upon volumes. The buyer receives a nonoperating interest in oil and gas properties that produce the required volumes. The security is a real interest in the producing properties that is expected to survive bankruptcy of the E&P company that sold the VPP. When the total requisite units of production are delivered, the production payment arrangement terminates and the conveyed interest reverts back to the seller.

We view production payments structured with a high level of security to production coverage as debt-like obligations, and adjust financial and operating analysis accordingly. The retention of risk in VPPs is central to our treatment of such deals as largely debt-like.

The accounting for VPPs affects the seller's financial statements and also operating statistics in several ways. The VPP volumes (i.e., the amount of oil and gas required to be delivered under the agreement) are removed from the seller's reserves. Proceeds received for the VPP increase the seller's cash balances, and the seller books a deferred revenue liability—or debt—to reflect the obligation under the agreement. Revenues and costs incurred to produce the VPP volumes are included in the seller's income statement as and when the oil and gas is produced. Operating statistics calculated on a per-barrel basis will be overstated because they include both the amortization of deferred revenues and costs, but do not factor in the volumes related to the VPP. In the case of lifting costs, for example, barrels produced in the numerator are lower, while the expense in the denominator continues to include the cost of producing the VPP volumes.

When the necessary data are available, we adjust the reported results to minimize the distortion caused by accounting for a production payment. The required volumes are returned to reserves and deferred revenue is treated as debt. Similarly, the oil and gas volumes produced to meet the VPP requirements are added to the E&P company's production when calculating per-barrel sales and lifting costs. This

treatment reflects the view that VPPs are conceptually similar to secured debt, rather than asset sales. The similarity pertains in typical deals, in which the reserves included in the production agreement are significantly greater than the required volumes. The seller bears the obligation to deliver the agreed-upon volumes, and retains the production and a significant amount of reserve risk, while receiving the benefit of fixing commodity prices. A VPP structured with minimal coverage would be viewed as closer to an asset sale, since the transfer of risk would be more substantial.

Adjustment procedures

Data requirements

- Amount of VPP-related deferred revenue reported on the balance sheet at period end;
- Oil and gas reserve data (related to VPPs that have been removed from reported amounts);
- Remaining quantity of oil and gas reserves removed from reported reserves at end of period (yet to be delivered); and
- Oil and gas volumes produced during the year from the VPPs.

The amount of deferred revenue related to VPPs at period end is obtained from the financial statements. Reserve quantities may come from the financial statements or from the company.

Calculations

- Adjustment to debt: We add the amount of deferred VPP revenue at period end to debt.
- Adjustment to interest expense: We impute interest expense on the adjustment to debt. The rate is that inherent in the contract, or a rate estimated by the analyst based on the company's secured borrowing rates. In either case, it is applied to the average of the current period end, and the previous period end deferred VPP revenue balance.
- We add period-end reserve volumes related to VPPs back to reported reserves.
- Similarly, we add the oil and gas volumes produced to meet the VPP requirements to the company's production and sales statistics used to calculate per-barrel selling prices and lifting costs.
- Adjustment to operating cash flow: We reclassify cash proceeds from VPPs as

financing cash flows. Future cash flows will be adjusted (if practicable and data are available) upon delivery, to reflect the cash flows associated with the properties.

(Please see "Credit FAQ: Volumetric Production Payments For U.S. Oil And Gas Companies," published April 14, 2005, and "Oil And Gas Volumetric Production Payments: The Corporate Ratings Perspective," published Dec. 4, 2003, on RatingsDirect.)

Workers compensation/self insurance
Workers compensation systems provide compensation for employees injured in the course of employment. While schemes differ between jurisdictions, provisions may be made for payments in lieu of wages, compensation for economic losses (past and future), reimbursement for or payment of medical and like expenses, general damages for pain and suffering, and benefits payable to the dependents of workers killed during employment. (For example, U.S. coal mining companies, under the Federal Coal Mine Health and Safety Act, are responsible for medical and disability benefits to existing and former employees and their families who are affected by pneumoconiosis, better known as black lung disease.)

Workers compensation coverage may be provided through insurance companies, and thus is not a financial concern for the company. But, in certain instances and/or industries,

employers assume direct responsibility for medical treatment, lost wages, etc.

In these cases, under U.S. GAAP or IFRS, the incurred liabilities usually are recorded on the company's balance sheet as other liabilities, based on an actuarially determined present value of known and estimated claims.

Accordingly, these obligations represent a call on future cash flow, distinguishing them from many other, less-certain contingencies. They are analogous to postretirement obligations, which we also add to debt.

Treating the workers-compensation liability as debt affects many line items on the financial statements. Ideally, if there is sufficient disclosure available, we would adjust fully (in a manner akin to our post-retirement adjustments). In practice, the data are not available, so we reclassify these obligations, adjusted for tax, as debt. Similarly, we may also treat other analogous self-insurance-type liabilities as debt.

Adjustment procedures

Data requirements

- Net amount recognized as a liability for workers compensation obligations and for self-insurance claims.

Calculations

- Add amount recognized for workers compensation obligations (net of tax) and net amount recognized for self-insurance claims (net of tax) to debt. ■

Rating Each Issue

We assign two types of credit ratings—one to corporate issuers and the other to individual corporate debt issues (or other financial obligations). The first is called a Standard & Poor's corporate credit rating. It is our current opinion on an issuer's overall capacity to pay its financial obligations, i.e., its fundamental creditworthiness. This opinion focuses on the issuer's ability and willingness to meet its financial commitments on a timely basis. It generally indicates the likelihood of default regarding all financial obligations of the company, because, in most countries, companies that default on one debt type—or file for bankruptcy—virtually always stop payment on all debt types.

The corporate rating does not reflect any priority or preference among obligations. In the past, we published the “implied senior-most rating” of corporate obligors—a different term for precisely the same concept. “Default risk rating” and “natural rating” are additional ways of referring to this issuer rating.

(Generally, a corporate credit rating is published for all companies that have issue ratings—in addition to those companies that have no ratable issues, but request just an issuer rating. Where it is germane, both a local currency and foreign currency issuer rating are assigned.)

We also assign credit ratings to specific issues. In fact, the vast majority of credit ratings pertain to specific debt issues. Long-

term issue ratings are a blend of default risk (sometimes referred to as “timeliness”) and the recovery prospects (loss given default, or LGD) associated with the specific debt being rated. Debt with relatively good recovery prospects—especially well-secured debt—is rated above the corporate credit rating; debt with relatively poor prospects for such loss-given-default—especially junior debt—is rated below the corporate credit rating. Notching does not apply to short-term ratings (*see Commercial Paper chapter of this book*).

Recovery ratings were added in 2003. These ratings address only recovery prospects, using a scale of one to six, rather than the letter ratings.

Notching Down; Notching Up

The practice of differentiating issues in relation to the issuer's fundamental creditworthiness is known as "notching." Issues are notched up or down from the corporate credit rating level. Payment on time as promised obviously is critical with respect to all debt issues. The potential for recovery in the event of a default—i.e., ultimate recovery, albeit delayed—also is important, but timeliness is the primary consideration. That explains why issue ratings are still anchored to the corporate credit rating. They are notched—up or down—from the corporate credit rating in accordance with established guidelines explained here.

As default risk increases, the concern over what can be recovered takes on greater relevance and, therefore, greater rating significance. Accordingly, the loss-given-default aspect of ratings is given more weight as one moves down the rating spectrum. For example, subordinated debt can be rated up to two notches below a non-investment grade corporate credit rating, but one notch at most if the corporate credit rating is investment grade. (In the same vein, issues of companies with a 'AAA' rating need not be notched at all.)

For investment-grade companies, we seek to differentiate those financial obligations judged to have materially inferior recovery prospects by virtue of being unsecured or subordinated—either contractually or structurally. Priority in bankruptcy is considered in broad terms; there is no attempt to specify a default scenario.

In the speculative-grade categories, we do seek to predict specific recovery levels based on full-blown default-scenario modeling. Because any default would presumably be less distant in time than for investment-grade companies, it is more reasonable to analyze a specific anticipated default scenario, with associated asset mix and realizable values. When such a rigorous recovery analysis is performed, we assign a recovery rating and base the notching on the specific outcome. We focus on a central tendency of approximately 50%. Therefore, issues with recovery rates significantly above 50% are rated above the corporate rating; conversely, issues recovering significantly less than 50% are rated below

the corporate rating. We go into greater detail in "Speculative-grade").

Notching relationships underlying issue ratings are subject to review and change when actual developments vary from expectations. Changes in notching do not necessarily have to be accompanied by changes in default risk.

Notching guidelines are a function of the bankruptcy law and practice in the legal jurisdiction that governs a specific instrument. For example, distinguishing between senior and subordinated debt can be meaningless in India, where companies may be allowed to continue paying even common dividends at the same time they are in default on debt obligations; accordingly, notching is not applied in India. The majority of legal systems broadly follow the practices underlying our criteria for notching—but it always is important to be aware of nuances of the law as they pertain to a specific issue.

Preferred stock

Preferred stock carries greater credit risk than debt in two important ways: The dividend is at the discretion of the issuer, and the preferred represents a deeply subordinated claim in the event of bankruptcy. Prior to 1999, Standard & Poor's used a separate preferred stock scale. In February 1999, the debt and preferred stock scales were integrated.

Accordingly, now, preferred stock generally is rated below subordinated debt. When our credit rating on a company is investment grade, its preferred stock is rated two notches below the corporate credit rating. For example, if the corporate credit rating is 'A+', the preferred stock would be rated 'A-'. (In case of a 'AAA' corporate credit rating, the preferred stock would be rated 'AA+'.) When the corporate credit rating is non-investment grade, the preferred stock is rated at least three notches (one rating category) below the corporate credit rating. Deferrable payment debt is treated identically to preferred stock, given subordination and the right to defer payments of interest.

There are situations in which the dividend is especially jeopardized, so notching would exceed the guidelines above. For example, state charters restrict payment when there is a

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deficit in the equity account. This can occur following a write-off, even while the company is healthy and possesses ample cash to continue paying. Similarly, covenants in debt instruments can endanger payment of dividends, even while there is a capacity to pay.

In all cases, the risk of deferral of payments is analyzed from a pragmatic, rather than a legal, perspective. If a company defers a payment or passes on a preferred dividend, it is tantamount to default on the preferred issues. The rating is changed to 'D' once the payment date has passed. The rating usually would be lowered to 'C' in the interim, to the extent non-payment can be anticipated—e.g., if the company were to announce that its directors failed to declare the preferred dividend. Whenever a company resumes paying preferred dividends but remains in arrears with respect to payments it skipped, the rating is, by definition, 'C'.

Convertible preferred/equity units

Some securities provide for mandatory conversion into common stock of a company. Such securities vary with respect to the formula for sharing potential appreciation in share value. In the interim, these securities represent a subordinated debt or preferred stock claim. Other offerings package a short-life debt or preferred stock with a deferred common stock purchase contract to achieve similar economics.

Ratings on the issue address primarily the likelihood of interim payments and the solvency of the company at the time of conversion to enable it to honor its obligation to deliver the shares. These ratings do not address the amount or value of the common stock investors ultimately will receive. The equity risk that pertains is reflected merely by limiting the rating to the equivalent of the company's preferred equity securities. (We once highlighted this risk by appending an "r" to the ratings of these hybrid securities, but now rely on the market's familiarity with such instruments and their terms.)

Reflecting Recovery In Issue Ratings

If we can confidently project recovery prospects exceeding 70% for an individual security, that issue is typically rated higher than the corporate

rating; conversely, if we project recovery for a given security to be under 30%, the issue is typically rated lower than the corporate rating. When we cannot confidently model absolute recovery because of jurisdictional issues or because the corporate credit rating is investment-grade and the issue is unsecured, we notch down when a debt issue's junior standing, relative to other debt issues of the company, indicates relatively poor recovery prospects.

The weighting of recovery aspects in issue ratings also varies as the potential for default becomes more meaningful, as explained below.

Investment grade

For investment-grade companies, notching relationships are based on broad guidelines that combine consideration of asset protection and ranking. The guidelines are designed to identify material disadvantage for a given issue by virtue of the existence of better-positioned obligations. The analyst does not seek to predict specific recovery levels, which would involve knowing the exact asset mix and values at a point well into the future. Therefore we do not generally perform a fundamental recovery analysis, given the difficulty of doing meaningful default scenario analysis while the company is still so strong.

(For example, we would not presume that default occurs while the company's capital structure remains roughly the same—as we generally do in the recovery analysis of speculative grade companies. With respect to currently strong credits—with relatively unburdened balance sheets—such an approach would be inappropriate. Indeed, currently, we typically do not assign recovery ratings for debt issues of investment-grade corporates—with the exception of utility first mortgage bonds.)

Rather, we use a rule-of-thumb approach to identify debt issues with inferior recovery prospects—or, for consideration of adding notches, we use discrete asset valuations if there is collateral (modified somewhat in the case of regulated utilities).

Rating below the corporate credit rating: "Notching down"

When a debt issue is judged to be junior to other debt issues of the company, and thereby to have relatively poor recovery prospects,

that issue is notched down from the corporate credit rating. As a matter of rating policy, the differential is limited to one rating designation in the investment-grade categories given the critical role of timeliness for investment grade debt. Loss-given-default is just less significant in the scheme of things for investment grade—leading to less weight given to recovery; investors are focused on getting paid in the first place.

Whenever a threshold percentage of the company's assets would first be used to satisfy other claims, this translates into a meaningful disadvantage for the "junior" creditors. The threshold for notching is reached when more-senior claims cover over 20% of the assets (unless less-valuable assets make up the collateral or there exist mitigating factors, such as upstream guarantees).

While we do not make specific judgments regarding the level of absolute recovery for investment-grade debt, the material disadvantage of junior issues is designed to roughly correspond to the 30% absolute-recovery benchmark that applies for speculative-grade notching. More often than not, junior debt recovers less than 30% (although this figure may vary by jurisdiction).

The threshold level takes into account that it normally takes more than \$1 of book assets—as valued today—to satisfy \$1 of priority debt. In the case of secured debt—which limits the priority to the collateral pledged—the remaining assets are still less likely to be sufficient to repay the unsecured debt, inasmuch as the collateral ordinarily consists of the company's better assets and often substantially exceeds the amount of the debt.

Moreover, in all likelihood, there will be additional debt by the time of default, as pointed out above. Since such debt—as well as the refinancing of existing debt—will be incurred as the company approaches default, it is more likely to be on a secured basis (or directly to the entity that holds the operating assets, in the case of an operating company/holding company structure).

To the extent that certain obligations have a priority claim on the company's assets, lower-ranking obligations are at a disadvantage because a smaller pool of assets will be

available to satisfy the remaining claims. As mentioned above, debt can be junior by virtue of being contractually subordinated—that is, the terms of the issue specifically provide that debt holders will receive recovery in a bankruptcy only after the claims of other creditors have been satisfied.

Another case is when the issue is unsecured, while assets representing a significant portion of the company's value collateralize secured borrowings. (If the collateral that secures a particular debt issue is of dubious value, while the more valuable collateral is pledged to another loan, even secured debt may be notched down from the corporate credit rating.)

A third form of disadvantage can arise if a company conducts its operations through an operating subsidiary/holding-company structure. In this case, if the whole group is bankrupt, creditors of the subsidiaries—including holders of even contractually subordinated debt—would have the first claim to the subsidiaries' assets, while creditors of the parent would have only a junior claim, limited to the residual value of the subsidiaries' assets remaining after the subsidiaries' direct liabilities have been satisfied. The disadvantage of parent-company creditors owing to the parent/subsidiary legal structure is known as "structural subordination." Even if the group's operations are splintered among many small subsidiaries, the individual debt obligations of which have only dubious recovery prospects, the parent-company creditors may still be disadvantaged compared with a situation in which all creditors would have an equal claim on the assets.

If a company has an atypical mix of assets, the 20% threshold could be higher or lower to reflect the relative amounts of better or worse assets. Goodwill especially is suspect, considering its likely value in a default scenario. In applying the notching guidelines, Standard & Poor's generally eliminates from total assets goodwill in excess of a normal amount—10% of total adjusted assets. As distinct from goodwill, intangibles are considered potentially valuable—for example, established brands in the consumer products sector. We do not, however, perform detailed asset appraisals or attempt to postulate specifically about how market values might fluctuate in a hypotheti-

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cal stress scenario (except in the case of secured debt).

The concept behind these thresholds is to measure material disadvantage with respect to the various layers of debt. At each level, as long as the next layer of debt still enjoys plenty of asset coverage, we do not consider the priority of the top layers as constituting a real disadvantage for the more junior issuers. Accordingly, the nature of the individual company's asset is important: If a company has an atypical mix of assets, the thresholds could be higher or lower to reflect the relative amounts of better or worse assets.

The relative size of the next layer of debt also is important. If the next layer is especially large—in relation to the assets assumed to remain after satisfying the more senior layers—then coverage is impaired. There are numerous LBOs financed with outsized issues just below the senior layers. Although the priority debt may be small (below the threshold levels), it poses a real disadvantage for junior issues: given the paucity of coverage remaining, the junior debt should be notched down.

One other note to keep in mind is that “absolute trumps relative.” If for structural or other issue-specific (or jurisdiction specific) reasons we can confidently anticipate recovery above 30% (and below 70%), we would equate the issue rating with the corporate credit rating, regardless of the result of the priority debt calculation. Similarly, if there were structural, issue-specific, or jurisdiction-specific reasons to anticipate recovery below 30%, we would rate the issue one notch below the corporate credit rating. These absolute recovery ranges are similar to those used for speculative-grade issue rating guidelines where we assign recovery ratings.

Application of guidelines

In applying the guidelines above, lease obligations—whether capitalized in the company's financial reporting or kept off balance sheet as operating leases as priority debt—and the related assets are included on the asset side. Similarly, sold trade receivables and securitized assets are added back, along with an equal amount of priority debt. Other creditors are just as disadvantaged by such financing arrangements as by secured debt. In

considering the surplus cash and marketable securities of companies that presently are financially healthy, we assume neither that the cash will remain available in the default scenario, nor that it will be totally dissipated, but rather that, over time, this cash will be reinvested in operating assets that mirror the company's current asset base, subject to erosion in value of the same magnitude.

Local- and foreign-currency issue ratings. In determining local-currency issue ratings, the point of reference is the local-currency corporate credit rating: local-currency issue ratings may be notched down one notch from the local-currency corporate credit rating in the case of investment-grade issuers, or one or two notches in the case of speculative-grade issuers. A foreign-currency corporate credit rating on a company is sometimes lower than the local-currency corporate credit rating, reflecting the risk that a sovereign government could take actions that would impinge on the company's ability to meet foreign-currency obligations. But junior foreign-currency issues are not notched down from the foreign-currency corporate credit rating, because the government action would apply regardless of the senior/junior character of the debt. Of course, the issue would never be rated higher than if it had been denominated in local currency. For example, if the local-currency corporate credit rating on a company were ‘BB+’ and the foreign-currency corporate credit rating were ‘BB-’, subordinated foreign currency-denominated issues could be rated ‘BB-’. But, if the local-currency corporate credit rating were ‘BB+’ and the foreign currency corporate credit rating was ‘BB’, the subordinated foreign-currency denominated issues would be rated ‘BB-’, as would the subordinated local-currency denominated issues.

Rating above the corporate credit rating: “Notching up”

Since we generally do not perform specific default scenario modeling for investment-grade companies, identifying issues with superior recovery characteristics usually relies on security provisions of a specific issue. Candidates for notching up are secured debt issues, where collateral consists of assets with

a well-established track record with respect to recovery, such as first mortgage bonds of regulated utilities.

As explained above, the weight given to recovery in assigning issue ratings diminishes as one moves up the rating spectrum. When a company's rating is in the 'BBB' category, its well-secured debt is rated one or two notches above the corporate rating, depending on the extent of the collateral coverage. For the 'A' category, the maximum addition is limited to one notch—and this applies only when full recovery is anticipated. For 'AAA' and 'AA' categories, notching up is phased out entirely.

Structural subordination

At times, a parent and its affiliate group have distinct default risks. The difference in risk may arise from covenant restrictions, regulatory oversight, or other considerations. This is the norm for holding companies of insurance operating companies and banks. In such situations, there are no fixed limits governing the gaps between corporate credit ratings of the parent and its subsidiaries. The holding company has higher default risk, apart from post-default recovery distinctions. If such a holding company issued both senior and junior debt, its junior obligations would be notched relative to the holding company's corporate credit rating by one or two notches.

Often, however, a parent holding company with one or more operating companies is viewed as a single economic entity. When the default risk is considered the same for the parent and its principal subsidiaries, they are assigned the same corporate credit rating. Yet, in a liquidation, holding-company creditors are entitled only to the residual net worth of the operating companies remaining after all operating company obligations have been satisfied. Parent-level debt issues are notched down to reflect structural subordination when the priority liabilities create a material disadvantage for the parent's creditors, after taking into account all mitigating factors. In considering the appropriate rating for a specific issue of parent-level debt, priority liabilities encompass all third-party liabilities (not just debt) of the subsidiaries—including trade

payables, pension and retiree medical liabilities, and environmental liabilities—and any relatively better positioned parent-level liabilities. (For example, parent-level borrowings collateralized by the stock of the subsidiaries would be disadvantaged relative to subsidiary liabilities, but would rank ahead of unsecured parent-level debt.) Potential mitigating factors include:

Guarantees

Guarantees by the subsidiaries of parent-level debt (i.e., upstream guarantees) may overcome structural subordination by putting the claims of parent company creditors on a *pari passu* basis with those of operating company creditors. Such guarantees have to be enforceable under the relevant national legal system(s), and there must be no undue concern regarding potential allegations of fraudulent conveyance. Although joint and several guarantees from all subsidiaries provide the most significant protection, several guarantees by subsidiaries accounting for a major portion of total assets would be sufficient to avoid notching of parent debt issues in most cases.

The legal analysis outcome depends on the specific fact pattern, not legal documentation—so one cannot standardize the determination. But, if either the guarantor company received value or was solvent for a sufficiently long period subsequent to issuing the guarantee, the upstream guarantee should be valid. Accordingly, we consider upstream guarantees valid if any of these conditions are met:

- The proceeds of the guaranteed obligation are provided (downstreamed) to guarantor. It does not matter whether the issuer downstreams the money as an equity infusion or as a loan. Either way, the financing benefits the operations of the subsidiary which justifies the guarantee;
- The legal risk period—ordinarily, one or two years from entering into the guarantee—has passed;
- There is a specific analytical conclusion that there is little default risk during the period that the guarantee validity is at risk; or
- The rating of the guarantor is at least 'BB-' in jurisdictions that involve a two-year risk,

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or at least 'B+' in jurisdictions with one year risk.

Operating assets at the parent

If the parent is not a pure holding company, but rather also directly owns certain operating assets, this gives the parent's creditors a priority claim to the parent-level assets. This offsets, at least partially, the disadvantage that pertains to being structurally subordinated with respect to the assets owned by the subsidiaries.

Diversity

When the parent owns multiple operating companies, more liberal notching guidelines may be applied to reflect the benefit the diversity of assets might provide. The threshold guidelines are relaxed (but not eliminated) to correspond with the extent of business and/or geographic diversification of the subsidiaries. For bankrupt companies that own multiple, separate business units, the prospects for residual value remaining for holding company creditors improve as individual units wind up with shortfalls and surpluses. Also, holding companies with diverse businesses—in terms of product or geography—have greater opportunities for dispositions, asset transfers, or recapitalization of subsidiaries. If, however, the subsidiaries are operationally integrated, economically correlated, or regulated, the company's flexibility to reconfigure is more limited.

Concentration of debt

If a parent has a number of subsidiaries, but the preponderance of subsidiary liabilities are concentrated in one or two of these, e.g., industrial groups having finance or trading units, this concentration of liabilities can limit the disadvantage for parent-company creditors. Although the net worth of the leveraged units could well be eliminated in the bankruptcy scenario, the parent might still obtain recoveries from its relatively unleveraged subsidiaries. In applying the notching guideline in such cases, it may be appropriate to eliminate the assets of the leveraged subsidiary from total assets, and its liabilities from priority liabilities. The analy-

sis then focuses on the assets and liabilities that remain, and the standard notching guideline must be substituted by other judgments regarding recovery prospects.

Downstream loans

If the parent's investment in a subsidiary is not just an equity interest, but also takes the form of downstream senior loans, this may enhance the standing of parent-level creditors because they would have not only a residual claim on the subsidiary's net worth, but also a debt claim that could be *pari passu* with other debt claims. However, most intercompany claims are subject to equitable subordination and/or other elimination in the bankruptcy process. Such assessment of downstream advances must take into account the applicable legal framework. (On the other hand, if the parent has borrowed funds from its subsidiaries, the resulting intercompany parent-level liability could further dilute the recoveries of external parent-level creditors.)

Adjustments

We eliminate from the notching calculations subsidiaries' deferred tax assets and liabilities and other accounting accruals and provisions that are not likely to have clear economic meaning in a default.

Speculative grade

For speculative grade issuers, we perform a fundamental recovery analysis, which is communicated via our recovery ratings. The different levels of recovery are factored into our debt issue ratings by adding or subtracting notches from the corporate credit rating (*see table 6*).

Recovery ratings assess a debt instrument's ultimate prospects for recovery of estimated principal and pre-petition interest (i.e., interest accrued but unpaid at the time of default) given a simulated payment default. Our recovery methodology focuses on estimating the percentage of recovery that debt investors would receive at the end of a formal bankruptcy proceeding or an informal out-of-court restructuring. Lender recoveries could be in the form of cash, debt or equity securities of a reorganized entity, or some combination thereof.

We focus on nominal recovery (rather than discounted present value recovery) because we believe discounted recovery is better identified independently by market participants who can apply their own preferred discount rate to our nominal recovery. (However, in jurisdictions with anticipated workout periods of longer than two to three years, we factor the delay into both recovery ratings and issue ratings to account for the time value of money and the inherent incremental uncertainty.)

While informed by historical recovery data, our recovery ratings incorporate fundamental deal-specific, scenario-driven, forward-looking analysis. They consider the impact of key structural features, inter-creditor dynamics, the nature of insolvency regimes, multi-jurisdictional issues, in the context of a simulated default.

We acknowledge that recovery analysis (including default modeling, valuation, and restructuring dynamics) is complex and does not lend itself to precise or certain predictions. Outcomes invariably involve unforeseen events and are subject to extensive negotiations that are influenced by the subjective judgments, negotiating positions, and agendas of the various stakeholders. Even so, we believe our methodology of focusing on a company's unique and fundamental credit risks—together with the composition and structure of its debt, legal organization, and

non-debt liabilities—provides valuable insight into creditor recovery prospects.

In this light, our recovery ratings are intended to provide educated approximations of post-default recovery rates, rather than exact forecasts. Recovery ratings, when viewed together with a company's risk of default as estimated by our corporate credit rating, can help investors evaluate a debt instrument's risk/reward characteristics and determine their expected return.

Jurisdiction-specific adjustments for recovery and issue ratings

Full-blown, fundamental recovery analysis is limited to jurisdictions where insolvency regimes are reasonably well established and sufficient precedent and data are available. In other jurisdictions, we do not assign recovery ratings—and the basis for rating a specific issue different from than the corporate credit rating is similar to that used in investment-grade situations. That is, we employ a simple rule-of-thumb approach to identify issues that are junior—and thereby materially disadvantaged with respect to recovery prospects. If claims that come ahead of a given debt issue equal 15% of assets, we subtract one notch from the corporate credit rating level; if such priority claims reach the 30% level, we subtract two notches. We do not rate issues more than two notches below the corporate

Table 6 Recovery Rating Scale And Issue Rating Criteria

(For issuers with a speculative-grade corporate credit rating)

Recovery rating	Recovery description	Recovery expectations (%)[*]	Issue rating notches relative to corporate credit rating
1+	Highest expectation, full recovery	100	+3
1	Very high recovery	90–100	+2
2	Substantial recovery	70–90	+1
3	Meaningful recovery	50–70	0
4	Average recovery	30–50	0
5	Modest recovery	10–30	-1
6	Negligible recovery	0–10	-2

^{*}Recovery of principal plus accrued but unpaid interest at the time of default. [†]Very high confidence of full recovery resulting from significant overcollateralization or strong structural features.

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credit rating on the basis of inferior recovery considerations.

We are in the process of reviewing all significant jurisdictions around the world to assess how insolvency proceedings in practice affect post-default recovery prospects and to consistently incorporate jurisdiction-specific adjustments. With the help of local insolvency practitioners, we assess each jurisdiction's creditor friendliness—in theory as well as in practice (about 30 jurisdictions have been assessed to date).

The four main factors that shape our analysis of the jurisdictions' creditor friendliness are:

- Security,
- Efficiency and control,
- Adherence to priorities, and
- Time to resolution.

Based on these factors, we classify the reviewed countries into three categories, according to their creditor-friendliness. This classification enables us to make jurisdiction-specific adjustments to our recovery analysis. We cap both recovery ratings and the differential between the issuer credit and debt issue ratings in countries with debtor-friendly insolvency regimes. (See *"Jurisdiction-Specific Adjustments To Recovery And Issue Ratings,"* published July 5, 2007, on RatingsDirect.)

Recovery Methodology For Industrials

Recovery analytics for industrial issuers has three basic components: determining the most likely path to default for a company; valuing the company following default; and distributing that value to claimants that we identify, based upon the relative priority of each claimant.

Establishing a simulated path to default
This step is a fundamental; we must first understand the forces most likely to cause a default before we can estimate a level of cash flow at default or value a company. This step draws on the company and sector knowledge of our credit analysts to formulate and quantify the factors most likely to cause a company to default, given its unique business risks and financial risks.

At the outset of this process, we deconstruct the borrower's cash flow projections

to understand management's general business, industry, and economic expectations. Once we understand management's view, we make appropriate adjustments to key economic, industry, and firm specific factors to simulate a payment default. While we recognize that there are many possible factors—both foreseen and unforeseen—that could lead to a default, we focus on the key operating factors that would most likely contribute to default.

Forecasting cash flow at default

The simulated default scenario is our assessment of the borrower's most likely path to a hypothetical payment default. The "insolvency proxy" is the point along that path that the company would default. The insolvency proxy is ordinarily defined as the point at which funds available plus free cash flow is exceeded by fixed charges.

The terms in this equation are:

Funds available. The sum of balance sheet cash and revolving credit facility availability (in excess of the minimal amount a company needs to operate its business at its seasonal peak).

Free cash flow. EBITDA in the year of default, less a minimal level of required maintenance capital expenditures, less cash taxes, plus or minus changes in working capital. For default modeling and recovery estimates, our EBITDA and free cash flow estimates ignore noncash compensation expenses and do not use our adjustments for operating leases.

Fixed charges. The sum, in the year of default, of:

- Scheduled principal amortization. Bullet or ballooning maturities are not treated as fixed charges, because lenders typically would refinance these amounts as long as a company can otherwise comfortably service its fixed charges.
- Required cash interest payments, including assumed increases to LIBOR rates on floating-rate debt and to the margin charged on debt obligations that have pricing grids or maintenance financial covenants; and
- Other cash payments the borrower is either contractually or practically obligated to pay that are not already captured as an operating expense. (Lease payments, for

example, are accounted for within free cash flow and are not considered a fixed charge.)

A projected default may occur even if fixed charges are fully covered in a few special circumstances:

- Strategic bankruptcy filings, when a borrower may attempt to take advantage of the insolvency process primarily to obtain relief from legal claims or onerous contracts;
- When a borrower in distress may rationally be expected to retain a large amounts of cash (e.g., to prepare for a complex, protracted restructuring; if it is in a very capital-intensive industry; if it is in a jurisdiction that does not allow for super-priority standing for new credit in a post-petition financing); or
- When a borrower's financial covenants have deteriorated beyond the level at which even the most patient lender could tolerate further amendments or waivers.

Free cash flow is not necessarily equal to the level at point of default, though. Cash flow may decline below the insolvency proxy if the borrower's operating performance is expected to continue to deteriorate due to whatever competitive and economic conditions are assumed in the simulated default scenario. In any event, we attempt to identify a level of cash flow as one basis for our valuation.

Determining valuation

We consider a variety of valuation methodologies, including market multiples, discounted cash flow (DCF) modeling, and discrete asset analysis. The market multiples and DCF methods are used to determine a company's enterprise value as a going concern. This is generally the most appropriate approach when our simulated default and recovery analysis indicates that the borrower's reorganization (or the outright sale of the ongoing business or certain segments) is the most likely outcome of an insolvency proceeding.

We use discrete asset valuation most often for industries in which this valuation approach is typically used, or when the simulated default scenario indicates that the borrower's liquidation is the most likely outcome of insolvency.

If a company is expected to reorganize, but certain creditors hold collateral consisting of only particular assets, then enterprise value is inappropriate—and we assess the collateral based in its discrete values.

Market multiples

The key to valuing a company using a market-multiples approach is to select appropriate comparable companies, or comps. The analysis should include several comps similar to the company being valued with respect to business lines, geographic markets, margins, revenue, capital requirements, and competitive position. Of course, an ideal set of comps does not always exist, so analytical judgment often is required to adjust for differences in size, business profiles, and other attributes. In addition, in the context of a recovery analysis, the multiples must consider the competitive and economic environments assumed in our simulated default scenario, which are often very different than present conditions. As a result, our analysis strives to consider a selection of multiples and types of multiples.

Ideally, we are interested in multiples for similar companies that have reorganized because of circumstances consistent with our simulated default scenario. In practice, however, the existence of such “emergence” multiple comps are rare. As a result, our analysis often turns to transaction or purchase multiples for comparable companies, because these generally are more numerous. With transaction multiples, we try to use forward multiples (purchase price divided by projected EBITDA), rather than trailing multiples (purchase price divided by historical EBITDA), because we believe forward multiples, which incorporate the benefit of perceived cash flow synergies used to justify the purchase price, provide a more appropriate reference point. In addition, trading multiples for publicly traded companies can be useful because they allow us to track how multiples change over economic and business cycles. This is especially relevant for cyclical industries and for sectors entering a different stage of development, or experiencing changing competitive conditions.

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A selection of multiples helps match our valuation with the conditions assumed in our simulated default scenario. For example, a company projected to default in a cyclical trough may warrant a higher multiple than one expected to default at a cyclical midpoint. Further, two companies in the same industry may merit meaningfully different multiples if one is highly levered and at risk of default from relatively normal competitive stresses, while the other is unlikely to default unless there is a large unexpected fundamental deterioration in the cash flow potential of the business model (which could make historical sector multiples irrelevant).

Our multiples analysis may also consider alternative industry-specific multiples—such as subscribers, hospital beds, recurring revenue, etc.—where appropriate. Alternatively, such metrics may serve as a check on the soundness of a valuation that relied on an EBITDA multiple, DCF, or discrete asset approach.

Discounted cash flow (DCF)

Our valuation is based on the long-term operating performance of the reorganized company. We use a perpetuity growth formula, which contemplates a long-term steady-state growth rate deemed appropriate for the borrower's business. However, when applicable, we start with specific annual cash flow forecasts for a period of time following reorganization, while relying on the perpetuity growth formula for subsequent periods.

Discrete asset valuation

We value the relevant assets by applying industry- and asset-specific advance rates or third-party appraisals.

Identifying and estimating the value of debt and nondebt claims

After valuing a company, we identify and quantify the debt obligations and other material liabilities that would be expected to have a claim against the company. Potential claims fall into three broad categories:

- Principal and accrued interest on all debt outstanding at the point of default,

whether issued at the operating company, subsidiary, or holding company level;

- Bankruptcy-related claims, such as debtor-in-possession (DIP) financing and administrative expenses for professional fees and other bankruptcy costs;
- Other nondebt claims, such as taxes payable, certain securitization programs, trade payables, deficiency claims on rejected leases, litigation liabilities, and unfunded post-retirement obligations.

Our analysis of these claims and their potential values takes into consideration each borrower's particular facts and circumstances, as well as the expected impact on the claims as a result of our simulated default scenario.

We estimate debt outstanding at the point of default by reducing term loans by scheduled amortization up to the point of our simulated default. We assume that all committed debt facilities, such as revolving credit facilities and delayed draw term loans, are fully drawn. For asset-based lending (ABL) facilities, we consider whether the borrowing base formula would allow the company to fully draw the facility in a simulated default scenario. For letters of credit, especially those issued under dedicated synthetic letter of credit tranches, we assess whether these contingent obligations are likely to be drawn.

Our estimate of debt outstanding at default also includes an estimate of prepetition interest, which is calculated by adding six months of interest (based on historical data from Standard & Poor's LossStats® database) to our estimated principal amount at default. The inclusion of pre-petition interest makes our recovery analysis more consistent with banks' credit risk capital requirements under the Basel II Framework.

Our analysis focuses on the recovery prospects for the debt instruments in a company's current or pro forma debt structure, and generally does not make estimates for other debt that may be issued prior to a default. We feel that this approach is prudent and more relevant to investors because the amount and composition of any additional debt (secured, unsecured, and/or subordinated) may materially impact lender recovery rates, and it is not

possible to know these particulars in advance. Further, incremental debt added to a company's capital structure may materially affect its probability of default, which could in turn affect all aspects of our recovery analysis (i.e., the most likely path to default, valuation given default, and loss given default). Consequently, changes to a company's debt structure are treated as events that require a reevaluation of our default and recovery analysis.

Still, we take into account the potential for additional debt by limiting the recovery ratings assigned to unsecured debt—and, in turn, the notches above the corporate rating that might be added. For companies with a 'B' category rating, the recovery rating would ordinarily be limited to '2'. For companies in the 'BB' category we would limit the recovery ratings assigned to unsecured issues to '3'. (Because they are further from potential default, there is a greater likelihood that interim change of their capital structure would occur.)

Also we add more debt to the extent that this is consistent with our specific expectations for a given issuer. Similarly, we may assume the repayment of near-term debt maturities—without refinancing—if the company is expected to retire these obligations and has the liquidity to do so. Furthermore, revolving credit facilities with near-term maturities are generally assumed to roll over with similar terms.

Determining distribution of value

Distributions are assumed to follow a waterfall approach that reflects the relative seniority of the claimants, reflecting the specific laws, customs, and insolvency regime practices for the relevant jurisdictions for a company. In the U.S., our general assumption of the relative priority of claimants is:

- Super-priority claims, such as DIP financing;
- Administrative expenses;
- Federal and state tax claims;
- Senior secured claims;
- Junior secured claims;
- Senior unsecured debt and nondebt claims;
- Subordinated claims;
- Preferred stock; and
- Common stock.

However, this priority of claims is subject to two critical caveats:

- The beneficial position of secured creditor claims, whether first-priority or otherwise, is only valid to the extent that the collateral supporting such claims is equal to, or greater than, the amount of the claim. If the collateral value is insufficient to fully cover a secured claim, then the uncovered amount or deficiency balance will be *pari passu* with all other senior unsecured claims.
- Structural issues may alter the priority of certain claims against specific assets or entities in an organization based on the company's legal entity structure and the relevant terms and conditions of the debt instruments.

The recovery prospects for different debt instruments of the same type (senior secured, senior unsecured, senior subordinated, etc.) might be very different, depending on the structure of the transactions. We review a company's debt and legal entity structure, the terms and conditions of the various debt instruments as they pertain to borrower and guarantor relationships, collateral pledges and exclusions, facility amounts, covenants, and debt maturities. In addition, we must understand the breakout of the company's cash flow and assets as it pertains to its legal organizational structure, and consider the effect of key jurisdictional and intercreditor issues. Key structural issues to explore include identifying:

- Higher priority liens on specific assets by forms of secured debt such as mortgages, industrial revenue bonds, and ABL facilities;
- Non-guarantor subsidiaries (domestic or foreign) that do not guarantee a company's primary debt obligations or provide asset pledges to support the company's secured debt;
- Claims at non-guarantor subsidiaries that will have a higher priority (i.e., a structurally superior) claim on the value related to such entities;
- Material exclusions to the collateral pledged to secured lenders, including the lack of asset pledges by foreign subsidiaries or the absence of liens on significant domestic assets, including the stock of foreign or domestic nonguarantor subsidiaries (whether due to concessions demanded by and grant-

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- ed to the borrower, poor transaction structuring, regulatory restrictions, or limitations imposed by other debt indentures); and
- Whether a company's foreign subsidiaries are likely to file for bankruptcy in their local jurisdictions as part of the default and restructuring process.

While our analysis typically reduces the enterprise value by the amount of secured claims in accordance with its priority, there may be meaningful excess collateral value that is available to other creditors, especially those with a second lien. For example, this is often the case when secured debt collateralized by a first lien on all noncurrent assets also takes a second-priority lien on working capital assets that are already pledged to support an asset-based revolving credit facility.

Significant domestic or foreign nonguarantor entities must be identified because these entities have not explicitly promised to repay the debt. Thus, the portion of enterprise value derived from these subsidiaries does not directly support the rated debt. As a result, debt and certain nondebt claims at these subsidiaries have a structurally higher priority claim against the subsidiary value. Accordingly, the portion of the company's enterprise value stemming from these subsidiaries must be estimated and treated separately in the distribution of value to creditors. This requires an understanding of the breakout of a company's cash flow and assets. Because these subsidiaries are still part of the enterprise being evaluated, any equity value that remains after satisfying the structurally superior claims would be available to satisfy other creditors of the entities that own these subsidiaries. Well-structured debt will often include covenants to restrict the amount of structurally superior debt that can be placed at such subsidiaries. Further, well-structured secured debt will take a lien on the stock of such subsidiaries to ensure a priority interest in the equity value available to support other creditors. In practice, the pledge of foreign subsidiary stock owned by U.S. entities is usually limited to 65% of voting stock for tax reasons. The residual value that is not captured by secured lenders through stock pledges would be expected to be available to all senior unsecured creditors on a pro rata basis.

Material assets (other than whole subsidiaries or subsidiary stock) not pledged to support secured debt would be shared by all senior unsecured creditors on a pro rata basis.

An evaluation of whether foreign subsidiaries would also be likely to file for bankruptcy is also required, because this would likely increase the cost of the bankruptcy process and create potential multi-jurisdictional issues that could impact lender recovery rates. The involvement of foreign courts in a bankruptcy process presents a myriad of complexities and uncertainties. For these same reasons, however, U.S.-domiciled borrowers that file for bankruptcy seldom also file their foreign subsidiaries without a specific benefit or reason for doing so. Consequently, we generally assume that foreign subsidiaries of U.S. borrowers do not file for bankruptcy unless there is a compelling reason to assume otherwise, such as a large amount of foreign debt that needs to be restructured to enable the company to emerge from bankruptcy. When foreign subsidiaries are expected to file bankruptcy, our analysis will be tailored to incorporate the particulars of the relevant bankruptcy regimes.

Intercreditor issues may affect the distribution of value and result in deviations from absolute priority (i.e., maintenance of the priority of the claims, including structural considerations, so that a class of claims will not receive any distribution until all classes above it are fully satisfied). In practice, Chapter 11 bankruptcies are negotiated settlements and the distribution of value may vary somewhat from the ideal implied by absolute priority for a variety of inter-creditor reasons, including, in the U.S., "accommodations" and "substantive consolidation."

Accommodations refer to concessions granted by senior creditors to junior claimants in negotiations to gain their cooperation in a timely restructuring. We generally do not explicitly model for accommodations because it is uncertain whether any concessions will be granted, if those granted will ultimately have value (e.g., warrants as a contingent equity claim), or whether the value will be material enough to meaningfully affect our projected recovery rates.

Substantive consolidation—in its pure form—represents a potentially drastic deviation from the ordering of priorities and distribution of value in bankruptcy plans of reorganization. In a true “legal” substantive consolidation, the assets and liabilities of an affiliated corporate group are collapsed into a single legal entity. This effectively would eliminate the credit support provided by structural priority, by treating creditors of the parent *pari passu* with creditors of operating units. However, true substantive consolidation is a rarely implemented, discretionary judicial doctrine. Our analysis relies on the low likelihood of true substantive consolidation, though we acknowledge that this risk could affect recoveries in certain cases.

Many more reorganization bankruptcy plans do involve a consolidation of a more limited nature. These consolidations do not radically affect the priority of external creditor claims—but do eliminate many inter-company claims, guaranties, and distributions and simplify the plan approval process and distributions to creditors under the plan. These “deemed” consolidations typically promote the resolution of complex multi-party negotiations and settlements along the lines of the relative legal priorities and bargaining strengths of creditors.

The bankruptcy process involves an inherent element of uncertainty. Indeed, the impact of deemed consolidation on recovery can vary. The extent to which more-senior creditors are willing to make concessions to more junior creditors to keep the process moving smoothly and to arrive at a consensual plan is impossible to predict.

However, in practice, the result of court-ordered consolidation is not sufficiently material enough of the time to be considered in our recovery rating assignments.

Surveillance of recovery ratings

Our recovery analysis at origination is unlikely to identify all of the actual claims at bankruptcy, or precisely predict the value of the company or the collateral given a default. Ratings are subject to periodic and event-specific surveillance. Factors that could impact our recovery analysis or ratings include:

- Acquisitions and divestitures;

- Updated valuation assumptions;
- Shifts in the profit and cash flow contributions of borrower, guarantor, or non-guarantor entities;
- Changes in debt or the exposure to non-debt liabilities;
- Inter-creditor dynamics; and
- Changes in bankruptcy law.

Features of U.S.-domiciled corporate bankruptcies

Debtor in possession financing. DIP facilities are usually super-priority claims that enjoy repayment precedence over unsecured debt and, in certain circumstances, secured debt. However, it is not possible to accurately quantify the size or likelihood of DIP financing or to forecast how DIP financing may affect the recovery prospects for different creditors. This is because the size or existence of a theoretical DIP commitment is unpredictable, DIP borrowings at emergence may be substantially less than the DIP commitment, and such facilities may be used to fully repay over-collateralized pre-petition secured debt. Further, the presence of DIP financing might actually help creditor recovery prospects by allowing companies to restructure their operations and preserve the value of their business. As a result of these uncertainties, estimating the impact of a DIP facility is beyond the scope of our analysis, even though we recognize that DIP facilities may materially impact recovery prospects in certain cases.

Administrative expenses. Administrative expenses relate to professional fees and other costs associated with bankruptcy that are required to preserve the value of the estate and complete the bankruptcy process. These costs must be paid prior to exiting bankruptcy, making them effectively senior to those of all other creditors. The dollar amount and materiality of administrative claims usually correspond to the complexity of a company's capital structure. We expect that these costs will be less for simple capital structures that can usually negotiate an end to a bankruptcy quickly and may even use a pre-packaged bankruptcy plan. Conversely, these costs are expected to be greater for large borrowers with complex capital structures where the

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insolvency process is often characterized by protracted multiple party disputes that drive up bankruptcy costs and diminish lender recoveries. When using an enterprise value approach, our methodology estimates the value of these claims as a percentage of the borrower's emergence enterprise value thusly:

- Three percent for capital structures with one primary class of debt;
- Five percent for two primary classes of debt (first-and second-lien creditors may be adversaries in a bankruptcy proceeding and are treated as separate classes for this purpose);
- Seven percent for three primary classes of debt; and
- Ten percent for certain complex capital structures.

When using a discrete asset valuation approach, these costs are implicitly accounted for in the orderly liquidation value discounts used to value a company's assets.

Other nondebt claims

Taxes. Various U.S. government authorities successfully assert tax claims as either administrative, priority, or secured claims. However, it is very difficult to project the level and status of such claims at origination (e.g., tax disputes en route to default are extremely hard to predict). However, their overall amount is seldom material enough to impact lender recoveries, so we generally do not reduce our expectation for lenders' recovery by estimating potential tax claims.

Swap termination costs. The U.S. Bankruptcy Code accords special treatment for counterparties to financial contracts, such as swaps, repurchase agreements, securities contracts, and forward contracts, to ensure continuity in the financial markets and to avoid systemic risk (so long as the type of contract and the type of counterparty fall within certain statutory provisions). Recent amendments to the Bankruptcy Code expanded this safe harbor by, among other things, including within the definition of a "swap" a range of transactions widely used in the capital markets (such as total return swaps and credit swaps) and expanding the definitions of counterparties (whether to swaps, repurchase agreements, securities contracts, or for-

ward contracts) eligible to exercise these rights. In addition to not being subject to the automatic stay that generally precludes creditors from exercising their remedies against the debtor, these financial contract counterparties have the right to liquidate, terminate, or accelerate the contract in a bankruptcy. Most currency and interest rate swaps related to secured debt are secured on a pari passu basis with the respective loans. Other swaps are likely to be unsecured. Quantifying such claims is beyond the scope of our analysis.

Securitizations. Standard accounts receivable securitization programs involve the sale of certain receivables to a bankruptcy-remote special purpose entity in an arms length transaction under commercially reasonable terms. The assets sold are not legally part of the debtor's estate (although in some circumstances they may continue to be reported on the company's balance sheet for accounting purposes), and the securitization investors are completely reliant on the value of the assets they purchased to generate their return. As a result, the securitization investors do not have any recourse against the estate and we do not consider them claimants when we use an enterprise valuation approach in our default and recovery analysis. However, the debtor emerging from bankruptcy will need to finance its trade receivables anew, creating an incremental financing requirement that must be considered in the recovery analysis.

When a discrete asset valuation approach is used, the sold receivables are not available to any creditors. Additionally, future-flow types of securitization, which securitizes all or a portion of the borrower's future revenue and cash flow (typically related to particular contracts, patents, trademarks, or other intangible assets), would effectively reduce all or a part of the enterprise value available to other corporate creditors.

Trade creditor claims. Typically, trade creditor claims are unsecured claims that rank pari passu with a borrower's other unsecured obligations. However, because a borrower's viability as a going concern hinges upon continued access to goods and services, some prepetition claims are either paid in the ordinary course or treated as priority administrative claims. This concession to critical trade

vendors ensures that they remain willing to carry on their relationships with the borrower during the insolvency proceedings, thereby preserving the value of the estate and enhancing the recovery prospects for all creditors. Our analysis assumes that these costs continue to be paid as part of the company's normal working capital cycle.

Accordingly, we include trade credit claims as priority obligations only to the extent that we believe there will be valid claims at the time of emergence—or that the company will incur additional debt (including DIP facilities) to pay those claims.

Leases. U.S. bankruptcy law provides companies the opportunity to accept or reject leases during the bankruptcy process. (For commercial real property leases, the review period is limited to 210 days, including a one-time 90-day extension, unless the lessor agrees to an extension.) If a lease is accepted, the company is required to keep rent payments on the lease current, meaning that there will be no claim against the estate. This also allows the lessee to continue to use the leased asset, with the cash flow (i.e., value) derived from the asset available to support other creditors.

If a lease is rejected, the company gives up the use of the asset. (The lessor may file a general unsecured claim against the estate for damages arising from the breach of contract.) We estimate the impact of lease rejection, starting with a lease rejection rate for the firm based on the types of assets leased, the industry, and our simulated default scenario. Leases are typically rejected for one of three reasons:

- The lease is priced above market rates;
- The leased asset is generating negative or insufficient returns; or
- The leased asset is highly vulnerable to obsolescence during the term of the lease.

Our evaluation may ballpark the rejection rate by assuming it matches the percentage decline in revenue in our simulated default scenario or, if applicable, by looking at common industry lease rejection rates. Case-specific considerations might include, for example, that leased assets are unusually old, underutilized, or priced above current market rates; a higher rejection rate in such cases may be warranted.

In bankruptcy, the amount of unsecured claims from rejected leases is determined by taking the amount of lost rental income and subtracting the net value available to the lessor by selling or re-leasing the asset in its next best use. However, the deficiency claims of commercial real estate lessors is further restricted to the greater of one year's rent or 15% of the remaining rental payments, not to exceed three years' rent. Lessors of assets other than commercial real property do not have their potential deficiency claims capped, but such leases are generally not material and are usually for relatively short-periods of time. With these issues in mind, we quantify lease deficiency claims for most companies by multiplying their estimated lease rejection rate by three times their annual rent.

However, there are a few exceptions to our general approach. Deficiency claims for leases of major transportation equipment (e.g., aircraft, railcars, and ships) are specifically analyzed because these lease obligations do not have their claims capped, may be longer term, and are typically for substantial amounts. In addition, we use a lower rent multiple for cases in which a company relies primarily on very short-term leases (three years or less). Further, we do not include any deficiency claim for leases held by individual asset-specific subsidiaries that do not have credit support from other entities (by virtue of guarantees or co-lessee relationships) because of the lack of recourse against other entities and the likelihood that these subsidiaries are likely to be worthless if the leases are rejected. (This situation was relevant in many of the movie exhibitor bankruptcies in the early 2000 time period.)

Employment-related claims. Material unsecured claims may arise when a debtor rejects, terminates, or modifies the terms of employment or benefits for its current or retired employees. To reflect this risk for unsecured debtholders, we are likely to include some level of employment-related claims for companies—but only where uncompetitive labor or benefits costs are a factor in our simulated default scenario.

Pension plan termination claims. The ability to terminate a defined benefit pension plan is provided under the U.S.

Rating Each Issue

Employee Retirement Income Security Act (ERISA). Under ERISA, these plans may be terminated voluntarily by the debtor as the plan sponsor, or involuntarily by the Pension Benefit Guaranty Corporation (PBGC) as the agency that insures plan benefits. Typically, any termination during bankruptcy will be a "distress termination," in which the plan assets would be insufficient to pay benefits under the plan. However, the bankruptcy of the plan sponsor does not automatically result in the termination of its pension plans, and even underfunded plans may not necessarily be terminated; the debtor must demonstrate

that it would not be able to successfully reorganize unless the plan is terminated.

In a distress termination, the PBGC assumes the liabilities of the pension plan up to the limits prescribed under ERISA and gets an unsecured claim in bankruptcy against the debtor for the unfunded benefits. The calculation of this liability is based on different assumptions than the borrower's reported liability in its financial statements. This, in addition to the difficulty of predicting the funded status of a plan at some point in the future, complicates our ability to accurately assess the value of these claims. ■

Commercial Paper

Commercial paper (CP) consists of unsecured promissory notes issued to raise short-term funds. CP ratings pertain to the program established to sell such notes. There is no review of individual notes. Typically, only companies of strong credit standing can sell their paper in the money market, although there periodically is some issuance of lesser quality, unrated paper (notably, prior to the junk bond market collapse late in 1989). Alternatively, companies sell commercial paper backed by letters of credit (LOC) from banks. Credit quality of such LOC-backed paper rests entirely on the transaction's legal structure and the bank's creditworthiness. As long as the LOC is structured correctly, credit quality of the direct obligor can be ignored.

Rating Criteria

Evaluation of an issuer's commercial paper reflects our opinion of the issuer's fundamental credit quality. The analytical approach is virtually identical to the one followed in assigning a long-term corporate credit rating, and there is a strong link between the short-term and long-term rating systems. Indeed, the time horizon for CP ratings is not a function of the typical 30-day life of a commercial-paper note, the 270-day maximum maturity for the most common type of commercial paper in the U.S., or even the one-year tenor typically used to determine which instrument gets a short-term rating in the first place.

To achieve an 'A-1+' CP rating, the company's credit quality must be at least the equivalent of an 'A+' long-term corporate credit rating. Similarly, for commercial paper to be rated 'A-1', the long-term corporate credit rating would need to be at least 'A-'. In fact, the 'A+/A-1+' and 'A-/A-1' combinations are rare. Ordinarily, 'A-1' CP ratings are associated with 'A+' and 'A' long-term ratings.

Conversely, knowing the long-term rating will not fully determine a CP rating, considering the overlap in rating categories. However, the range of possibilities is always narrow. To the extent that one of two CP ratings might be assigned at a given level of long-term credit

Commercial Paper

quality (e.g., if the long-term rating is 'A'), overall strength of the credit within the rating category is the main consideration. For example, a marginal 'A' credit likely would have its commercial paper rated 'A-2', whereas a solid 'A' would almost automatically receive an 'A-1'. Exceptional short-term credit quality would be another factor that determines which of two possible CP ratings are assigned. For example, a company may possess substantial liquidity—providing protection in the near or intermediate term—but suffer from less-than-stellar profitability, a longer-term factor. Or, there could be a concern that, over time, the large cash holdings may be used to fund acquisitions. (Having different time horizons as the basis for long- and short-term ratings implies either one or the other rating is expected to change.)

Backup Policies

Ever since the Penn Central bankruptcy roiled the commercial-paper market and some companies found themselves excluded from issuing new commercial paper, we have deemed it prudent for companies that issue commercial paper to make arrangements in advance for alternative sources of liquidity. This alternative, backup liquidity protects companies from defaulting if they are unable to roll over their maturing paper with new notes, because of a shrinkage in the overall commercial-paper market or some cloud over the company that might make commercial paper investors nervous.

Many developments affecting a single company or group of companies—including bad business conditions, a lawsuit, management changes, a rating change—could make commercial-paper investors flee the credit. Given the size of the commercial-paper market, backup facilities could not be relied on with a high degree of confidence in the event of widespread disruption. A general disruption of commercial-paper markets could be a highly volatile scenario, under which most bank lines would represent unreliable claims on whatever cash would be made available through the banking system to support the market. We neither anticipate that such a scenario is likely to develop, nor assume that it never will.

Having inadequate backup liquidity affects both the short- and long-term ratings of the issuer because it could lead to default, which would ultimately pertain to all of the company's debt. Moreover, the need for backup applies to all confidence sensitive obligations, not just rated commercial paper. Backup for 100% of rated commercial paper is meaningless if other debt maturities—for which there is no backup—coincide with those of the commercial paper. Thus, the scope of backup must extend to euro-denominated commercial paper, master notes, and short-term bank notes.

The standard for industrial and utility issuers has long been 100% coverage of confidence-sensitive paper for all but the strongest credits. Companies rated 'A-1+' can provide 50%-75% coverage. A higher-rated entity is less likely to encounter business reverses of significance and—in the event of a general contraction of the commercial-paper market—the higher-rated credit would be less likely to lose investors. In fact, higher-rated companies could actually be net beneficiaries of a flight to quality.

While the backup requirement relates only to outstanding paper—rather than the entire program authorization—a company should anticipate prospective needs. For example, it may have upcoming maturities of long-term debt that it may want to refinance with commercial paper, which would then call for backup of greater amounts.

Available cash or marketable securities are ideal to provide backup. (Of course, it may be necessary to "haircut" their apparent value to account for potential fluctuation in value or tollgate taxes surrounding a sale. And it is critical that they be immediately saleable.) Yet the vast majority of commercial paper issuers rely on bank facilities for alternative liquidity.

The high standard for back-up liquidity has provided a sense of security to the commercial paper market—even though backup facilities are far from a guarantee that liquidity will, in the end, be available. For example, a company could be denied funds if its banks invoked material adverse change clauses. Alternatively, a company in trouble might draw down its credit line to fund other cash

needs, leaving less-than full coverage of paper outstanding, or issue paper beyond the expiration date of its lines.

In 1999, we introduced a new approach that offers companies greater flexibility regarding the amount of backup they maintain, if they are prepared to match their maturities carefully with available liquidity. The alternative approach differentiated between companies that are rolling over all their commercial paper in just a few days and those that have a cushion by virtue of having placed longer-dated paper. The basic idea was that companies—if and when they lose access to commercial paper—should have sufficient liquidity to cover any paper coming due during the time they would require to arrange additional funding. However, companies encountered practical difficulties in implementing the new approach. Moreover, changes in the banking environment have since made us more leery about a company arranging new facilities when under stress.

Still, notes that come due only 11-12 months from now do not require backup so far in advance. Companies should begin to actively arrange liquidity backup approximately six months prior to maturity. Similarly, 12-month notes that automatically extend their maturity month by month do not require back-up arrangements from day one. They will be able to arrange backup when and if the extensions stop, leaving a full 12 months to do so.

Extendible commercial notes (ECNs) provide built-in backup by allowing the issuer to extend for several months if there is difficulty in rolling over the notes; accordingly, there is no need to provide backup for them—i.e., until the extension is effected. However, there is no way to prevent the issuer from tapping backup facilities intended for other debt and use the funds to repay maturing ECNs, instead of extending. This risk is known as leakage. Accordingly, for issuers that provide 100% backup, unbacked ECNs must not exceed 20% of extant backup for outstanding conventional commercial paper.

All issuers—even if they provide 100% backup—must always ensure that the first few days of upcoming maturities are backed with excess cash or funding facilities that provide

for immediate availability. For example, a bank backup facility that requires two-day notification to draw down will be of no use in repaying paper maturing in the interim. The same would hold true if foreign exchange is needed, and the facility requires a few days to provide it. Moreover, if a company issuing commercial paper in the U.S. were relying on a bank facility in Europe, differences in time zones or bank holidays could prevent availability when needed. Obviously, a bank facility in the U.S. would be equally lacking with respect to maturing euro-denominated commercial paper. So-called swing lines typically equal 15%-20% of the program size to deal with the maximum amount that will mature in any three-to four-day period.

Quality Of Backup Facilities

Banks offer various types of credit facilities that differ widely regarding the degree of the bank's commitment to advance cash under all circumstances. Weaker forms of commitment, while less costly to issuers, provide banks great flexibility to redirect credit at their own discretion. Some lines are little more than an invitation to do business at some future date.

We expect all backup lines to be in place and confirmed in writing. Pre-approved lines or orally committed lines are viewed as insufficient. Specific designation for commercial-paper backup is of little significance.

Contractually committed facilities are desirable. In the U.S., fully documented revolving credits represent such contractual commitments. The weaker the credit the greater the need for more reliable forms of liquidity. As a general guideline, if contractually committed facilities cover 10-15 days' upcoming maturities of outstanding paper, that should suffice.

Even contractual commitments often include "material adverse change" clauses, allowing the bank to withdraw under certain circumstances. While inclusion of such an escape clause weakens the commitment, we do not consider it critical—or realistic—for most borrowers to negotiate removal of "material adverse change" clauses.

In the absence of a contractual commitment, payment for the facility—whether by fee or balances—is important because it gen-

Commercial Paper

erally creates some degree of moral commitment on the part of the bank. In fact, a solid business relationship is key to whether a bank will stand by its client. Standardized criteria cannot capture or assess the strength of such relationships. We therefore are interested in any evidence—subjective as it may be—that might demonstrate the strength of an issuer's banking relationships. In this respect, the analyst is also mindful of the business cultures in different parts of the world and their impact on banking relationships and commitments.

Dependence on just one or a few banks also is viewed as an unwarranted risk. Apart from the potential that the bank will not have adequate capacity to lend, there is the chance it will not be willing to lend to this issuer. Having several banking relationships diversifies the risk that any bank will lose confidence in this borrower and hesitate to provide funds.

Concentration of banking facilities also tends to increase the dollar amount of an individual bank's participation. As the dollar amount of the exposure becomes large, the bank may be more reluctant to step up to its commitment. In addition, the potential requirement of higher-level authorizations at the bank could create logistical problems with respect to expeditious access to funds for the issuer. On the other hand, a company will not benefit if it spreads its banking business so thinly that it lacks a substantial relationship with any of its banks.

There is no analytical distinction to be made between a 364-day and a 365-day facility. Even multiyear facilities will provide commitment for only a short time as they approach the end of their terms. It obviously is critical that the company arranges for the continuation of its banking facilities well in advance of their lapsing.

It is important to reiterate that even the strongest form of backup—a revolver with no “material adverse change” clause—does not enhance the underlying credit and does not lead to a higher rating than indicated by the company's own creditworthiness. Credit enhancement can be accomplished only through an LOC or another instrument that unconditionally transfers the debt obligation to a higher-rated entity.

Banks providing issuers with facilities for backup liquidity should themselves be sound. Possession of an investment-grade rating indicates sufficient financial strength for the purpose of providing a commercial paper issuer with a reliable source of funding.

There is no requirement that the bank's credit rating equal the CP issuer's rating; nonetheless, we look askance at situations where most of a company's banks were only marginally investment grade. That would indicate an imprudent reliance on banks that might deteriorate to weaker, noninvestment-grade status. ■

Arizona Public Service Company
Computation of Increase in Gross Revenue Requirement
On Change in Rate Base Since Decision 69663
ACC Jurisdictional

Docket No. E-01 345 A-08-01 72
Schedule A
Page 1 of 1

Test Year Ended December 31, 2007

Line No.	Description	Reference	Original Cost (A)
1	Adjusted Rate Base	Sch. B	\$ 537,987
2	Rate of Return	Sch. D	<u>8.32%</u>
3	Operating Income Required		\$ 44,753
4	Net Operating Income Available	Sch. C	<u>\$ 5,212 [a]</u>
5	Operating Income Excess/Deficiency		\$ 39,541
6	Gross Revenue Conversion Factor	Sch. A-1	<u>1.6491</u>
7	Base Rate Revenue Increase for Interim Rates		<u><u>\$ 65,206</u></u>

Notes and Source

[a] Interest synchronization

Arizona Public Service Company
 Computation of Gross Revenue Conversion Factor
 For Alternative Interim Rates

Docket No. E-01345A-08-0172
 Schedule A-1
 Page 1 of 1

Test Year Ended December 31, 2007

Line No.	Description	Company Proposed (A)
1	Gross Revenue	100.00%
2	Less: State income taxes	<u>6.71000%</u>
3	Taxable Income as a Percent	93.29%
4	Less: Federal and State Income Taxes 35%	<u>32.65%</u>
5	Change in Net Operating Income	<u><u>60.64%</u></u>
6	Gross Revenue Conversion Factor	<u><u>1.6491</u></u>

Notes and Source

APS Amended Application, Schedule C-3

Components of Interim Revenue Requirement Increase \$ 65,206 Sch A

	Percent	Amount
7	Net Income	<u>60.64%</u> \$ 39,541
8	Federal and State Income Taxes	39.36% \$ 25,665
9	Uncollectibles	\$ -
10	Total Revenue Increase	<u><u>100.00%</u></u> <u>\$ 65,206</u>

Arizona Public Service Company
Summary of Rate Base Change
From Decision No. 69663 to Unadjusted Test Year Ended 12/31/07

Docket No. E-01345A-08-0172
Schedule B
Page 1 of 1

(Thousands of Dollars)

Line No.	Capital Source	Last Case E-01345A-05-0816 (A)	Current Case E-01345A-08-0172 (B)	Difference (C)
1	Original Cost Rate Base	\$ 4,403,496	\$ 4,941,483	\$ 537,987

Notes and Source

Decision No. 69663, page 15

APS Amended Application, Schedule B-1, page 1, Column D, ACC Jurisdiction, Unadjusted Test Year ended 12/31/2007

Arizona Public Service Company
Interest Synchronization

Docket No. E-01345A-08-0172
Schedule C
Page 1 of 1

Test Year Ended December 31, 2007
(Thousands of Dollars)

Line No.	Description	ACC		Reference
		Jurisdictional Amount	(A)	
1	Change in jurisdictional rate base	\$ 537,987		Schedule B
2	Weighted cost of debt	2.46%		Schedule D
3	Synchronized interest deduction	\$ 13,243		Line 1 x Line 2
4	Synchronized interest deduction	\$ -		Note A
5	Difference (decreased) increased interest deduction	\$ 13,243		Line 3 - Line 4
6	Combined federal and state income tax rates	39.360%		Note B
7	Increase (decrease) to income tax expense	\$ (5,212)		
8	Increase (decrease) to net operating income	\$ 5,212		

Notes and Source

- | | |
|---|--|
| A | None on the difference in jurisdictional rate base from Decision No. 69663 |
| B | APS Amended Application, Schedule C-2 |

Arizona Public Service Company
Capital Structure & Cost Rates
For Alternative Interim Rates

Docket No. E-01345A-05-0816
Schedule D
Page 1 of 1

Last Authorized Cost of Capital

Line No.	Capital Source	Capitalization		Cost Rate	Weighted Avg. Cost of Capital
		Amount	Percent		
1	Short-Term Debt			5.92%	0.00%
2	Long-Term Debt		45.50%	5.41%	2.46%
3	Common Stock Equity		54.50%	10.75%	5.86%
4	Total Capital	\$ -	100.00%		8.32%

Notes and Source

Decision No. 69663, page 49

BEFORE THE ARIZONA CORPORATION COMMISSION

MIKE GLEASON

Chairman

WILLIAM A. MUNDELL

Commissioner

JEFF HATCH-MILLER

Commissioner

KRISTIN K. MAYES

Commissioner

GARY PIERCE

Commissioner

IN THE MATTER OF THE APPLICATION OF)
ARIZONA PUBLIC SERVICE COMPANY FOR)
A HEARING TO DETERMINE THE FAIR)
VALUE OF THE UTILITY PROPERTY OF THE)
COMPANY FOR RATEMAKING PURPOSES,)
TO FIX A JUST AND REASONABLE RATE OF)
RETURN THEREON, AND TO APPROVE)
RATE SCHEDULES DESIGNED TO DEVELOP)
SUCH RETURN)

DOCKET NO. E-01345A-08-0172

DIRECT

TESTIMONY

OF

DAVID C. PARCELL

ON BEHALF OF THE

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

AUGUST 29, 2008

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1 **INTRODUCTION**

2 **Q. Please state your name, occupation, and business address.**

3 A. My name is David C. Parcell. I am President and Senior Economist of Technical
4 Associates, Inc. My business address is Suite 601, 1051 East Cary Street, Richmond,
5 Virginia 23219.

6
7 **Q. Please summarize your educational background and professional experience.**

8 A. I hold B.A. (1969) and M.A. (1970) degrees in economics from Virginia Polytechnic
9 Institute and State University (Virginia Tech) and a M.B.A. (1985) from Virginia
10 Commonwealth University. I have been a consulting economist with Technical
11 Associates since 1970. I have provided cost of capital testimony in public utility
12 ratemaking proceedings dating back to 1972. In connection with this, I have previously
13 filed testimony and/or testified in over 400 utility proceedings before 40 regulatory
14 agencies in the United States and Canada. Attachment 1 provides a more complete
15 description of my education and relevant work experience.

16
17 **Q. Have you previously testified before the Arizona Corporation Commission?**

18 A. Yes, I have testified in a number of prior Arizona Corporation Commission
19 ("Commission") utility rate proceedings, including the recent electric rate cases involving
20 Arizona Public Service Company (Docket No. E-01345A-05-0816), UNS Gas, Inc.
21 (Docket No. G-01345A-05-0463), UNS Electric, Inc. (Docket No. E-0404A-06-0783),
22 Tucson Electric Power Co. (Docket No. E-01933A-07-0402) and Southwest Gas
23 Company (Docket No. G-01551A-07-0504). Those testimonies were provided on behalf
24 of the Utilities Division Staff.

25

1 **Q. What is the purpose of your testimony?**

2 A. My testimony addresses the financial and cost of capital implications of Arizona Public
3 Service Company's ("APS" or "Company") Motion for Approval of Interim Rate and
4 Preliminary Order. My testimony is designed to provide the Commission with additional
5 information on whether the Company's apparent nexus between a singular rating agency
6 financial metric and its Interim Rate request is compelling.

7
8 **Q. What is your understanding of the basis for APS' Interim Rate Request?**

9 A. The position of APS is contained in the affidavit of Donald E. Brandt. On page 4, lines 7-
10 12, Mr. Brandt makes the following statement:

11
12 *I believe that, without interim relief of the type requested in the Company's*
13 *Motion, it is more than likely that APS will be downgraded to junk status*
14 *before the Commission issues a decision in the Company's general rate*
15 *proceeding, resulting in approximately one billion dollars of additional*
16 *costs over the next ten years that will ultimately be borne by APS*
17 *customers.*

18
19 A primary aspect of the Company's request for Interim Rates is based on APS' belief that
20 there is a likelihood of a downgrading of its securities in the absence of Interim Rates.
21 This downgrade possibility, in turn, is primarily based upon the Company's focus on the
22 Standard & Poor's ("S&P") financial ratio Funds from Operations to Debt ratio
23 ("FFO/Debt"). This is demonstrated in Mr. Brandt's affidavit on page 12, lines 5-9, where
24 he makes the following statement:

25
26 *The rating agencies have established financial metrics as guidelines for*
27 *determining a credit rating. The key financial metric examined by the*
28 *credit rating agencies is the FFO/Debt ratio, which measures the*
29 *sufficiency of a company's cash flow to service both debt interest and debt*
30 *principal over time.*
31

1 Mr. Brandt goes on to state (page 12, lines 14-16) that APS' FFO/Debt ratio will fall
2 below the 18 percent "threshold" by the end of 2009. Based on this, he concludes that a
3 downgrade will occur in the absence of the approval of Interim Rates.

4
5 **Q. What is your conclusion concerning the necessity for Interim Rates in terms of APS'**
6 **rationale for requesting such rates?**

7 A. I conclude that APS' focus on a single financial metric (FFO/Debt) is not representative of
8 the manner in which the respective rating agencies indicate that ratings are established. It
9 is evident that many factors go into the ratings process.

10
11 It is also evident that APS has the lowest investment grade rating with only one of the
12 three major rating agencies (S&P). The other two agencies (Moody's and Fitch) rate APS
13 two grades above the investment grade category. Further, all these rating agencies give
14 APS a "stable" outlook. Based upon these factors, I do not believe that APS is presently
15 at any significant risk of a downgrade.

16
17 **RATING AGENCY METHODOLOGIES**

18 **Q. How do the rating agencies define individual ratings?**

19 A. Each of the three rating agencies has established a series of rating categories with which to
20 rate corporate securities. These are shown below:

	<u>Fitch</u>	<u>Moody's</u>	<u>S&P</u>
1			
2			
3	AAA	Aaa	AAA
4	AA+	Aa1	AA+
5	AA	Aa2	AA
6	AA-	Aa3	AA-
7	A+	A1	A+
8	A	A2	A
9	A-	A3	A-
10	BBB+	Baa1	BBB+
11	BBB	Baa2	BBB
12	BBB-	Baa3	BBB-
13	BB+	Ba1	BB+
14	BB	Ba2	BB
15	BB-	Ba3	BB-
16	B+	B1	B+
17	B	B2	B
18	B-	B3	B-
19	CCC+	Caa1	CCC+

Note that there are several categories of CCC and below that are not shown above.

It is universally accepted that "investment grade" is defined as a rating of triple-B or above. Moody's, for example, defines "investment grade" as "issuers rated from Aaa to Baa globally" on its website (Attachment 2). Ratings of less than triple-B are referred to as non-investment grade, or sometimes referred to as "junk bond" status. The Moody's scale, for example, provides the following description of its rating categories¹:

Aaa	"high grade"
Aa	"high grade"
A	"upper-medium grade"
Baa	"medium grade"
Ba	"speculative elements"
B	"lack characteristics of the desirable investment"
Caa	"poor standing"
Ca	"speculative in high degree"
C	"lowest rated class"

¹ Source: Mergent Bond Record (Attachment 3).

1 **Q. Do the rating agencies provide any additional indications of possible trends in a**
2 **company's ratings?**

3 **A.** Yes, they do. Each of the rating agencies employs a set of four "outlook" indicators –
4 negative, stable, positive, and under review. These are intended to provide an indication
5 of the potential direction of any possible ratings change.

6
7 **Q. How do the rating agencies determine the security ratings that are assigned to**
8 **corporations such as public utilities?**

9 **A.** The rating agencies utilize a number of quantitative and qualitative factors in assigning
10 security ratings. S&P is more commonly cited in this regard since this rating agency
11 provides more direct indications as to how its ratings are determined.

12
13 In providing ratings for public utilities, S&P utilizes a "Business Risk Profile" and a
14 "Financial Risk Profile." These are described in a November 30, 2007 RatingsDirect
15 (Attachment 4). The Business Risk Profile contains five categories:

16
17 Excellent
18 Strong
19 Satisfactory
20 Weak
21 Vulnerable

22
23 The Financial Risk Profile, in turn, contains five categories:

24
25 Minimal
26 Modest
27 Intermediate
28 Aggressive
29 Highly leveraged
30

1 **Q. What factors does S&P utilize in establishing a Business Risk Profile for a public**
2 **utility?**

3 A. S&P indicates that it uses the following factors to establish a Business Risk Profile:

4
5 Regulation
6 Markets
7 Operations
8 Competitiveness, and
9 Management

10
11 **Q. How does S&P indicate that it applies Financial Risk Profiles for public utilities?**

12 A. S&P indicates the following: "Financial risk is analyzed both qualitatively and
13 quantitatively, mainly with financial ratios and other metrics that are calculated after
14 various analytical adjustments are performed on financial statements prepared under
15 GAAP."

16
17 S&P identifies the following three financial ratios as the quantitative basis for its ratings:

18
19 FFO/Debt (%),
20 FFO/Interest (x), and
21 Total debt/capital (%)

22
23 **Q. Does S&P indicate if it uses these guidelines exclusively in establishing ratings?**

24 A. S&P indicates that it does not use these financial guidelines exclusively in setting ratings.

25 In the November 30, 2007 RatingsDirect, S&P noted:

26
27 *Note that even after we assign a company a business risk and financial*
28 *risk, the committee does not arrive by rote at a rating based on the matrix.*
29 *The matrix is a guide—it is not intended to convey precision in the ratings*
30 *process or reduce the decision to plotting intersections on a graph. Many*
31 *small positives and negatives that affect credit quality can lead a committee*
32 *to a different conclusion than what is indicated in the matrix.*

1 **Q. Do the other rating agencies also consider multiple factors in establishing security**
2 **ratings?**

3 **A. Yes, they do. Fitch, for example, describes its ratings methodology in a July 31, 2007**
4 **publication titled "Credit Rating Guidelines For Regulated Utility Companies"**
5 **(Attachment 5). In this, Fitch stated:**

6
7 *These guidelines are an overview of Fitch Ratings' global approach to*
8 *credit ratings for electric, natural gas and water utilities.*
9

10 ...

11
12 *The rating evaluation of an electric, gas or water utility considers the*
13 *qualitative and quantitative risks associated with the company's business*
14 *and corporate structure in combination with the company's financial*
15 *strength and liquidity. The financial assessment emphasizes cash flow*
16 *financial measures rather than equity or earnings-based ratios. The*
17 *analytical focus is on the adequacy of the utility's cash flow relative to*
18 *fixed charges, debt obligations and capital expenditures as well as its*
19 *capital structure, liquidity and profitability.*
20

21 *The assessment of operating and business risks is an important element in*
22 *determining ratings. This analysis is carried out using both quantitative*
23 *and qualitative methods. Quantitative factors with the most significant*
24 *effect on companies in the utilities sector include an evaluation of the*
25 *regulatory and political environment in which the utility operates,*
26 *including such factors as price-setting and cost-recovery mechanisms,*
27 *transparency and predictability of the regulatory regime, exposure to*
28 *competition and the nature of the customer franchise. In addition, Fitch's*
29 *operational and business evaluation considers the degree of which the*
30 *utility bears financial exposure to variations in commodity costs and in the*
31 *case of network businesses, the responsibility for reliable supply. The*
32 *business risk profile is also influenced by factors such as customer*
33 *demographics, the type and quality of assets, operating performance, fuel*
34 *mix, exposure to hydrological risk and management's strategy and*
35 *capability. Each of these factors will affect the predictability or volatility*
36 *of a utility's cash flow.*
37

38 *The assessment of operating risk also includes a review of the historical*
39 *volatility of operating cash flow, when available, compared to the*
40 *historical trend of similar companies. Fitch analysts review past cash flow*
41 *trends to assess how the volatility or stability has been affected by the*

1 *aforementioned fundamental factors. The assessment incorporates*
2 *analytical judgment about how fundamental factors may affect the*
3 *company's future operating cash flow.*

4
5 Fitch identifies the following factors that it considers:

6
7 Corporate/Legal Structure
8 Regulatory Environment
9 Franchise or Concession Terms
10 Price Setting
11 Potential For Regulatory Change
12 Service Area Demographics
13 Energy Supply
14 Commodity Price Exposure
15 Operating Efficiency
16 Management and Strategy
17 Financial Resources
18 Capital Structure and Financial Flexibility
19 Financial Ratio Analysis
20 Liquidity
21 Risk Assessment and Guideline Credit Ratios

22
23 It is obvious from this Fitch report that a larger number of factors are considered in
24 establishing credit ratings. Clearly, Fitch does not focus on a single ratio in setting
25 ratings.

26
27 **Q. Does Moody's also utilize multiple criteria in establishing ratings for utilities?**

28 A. Yes, it does. Unlike S&P and Fitch, however, Moody's does not appear to be as definitive
29 in its rating review methodology. Nevertheless, it is evident from a July 28, 2008 Credit
30 Opinion on APS (Attachment 6) that Moody's considers a number of both qualitative and
31 quantitative factors including:

32
33 Stability of regulated cash flows;
34 Economic strength of service territory;
35 Regulatory environment; and,

Cash flow metrics.

Moody's cites four cash flow metrics:

CFO pre-W/C to Interest (x);
CFO pre-W/C to Debt (%);
CFO pre-W/C – Dividends to Debt (%); and,
Total Debt to Book Capitalization.

This indicates that Moody's also considers multiple factors in setting its rating.

APS RATING STATUS

Q. What are the current bond ratings of APS?

A. There are three major bond rating agencies in the U. S. The current ratings of APS are as follows:

	<u>Issuer Rating</u>	<u>Senior Unsecured</u>
Fitch	BBB	BBB
Moody's	Baa2	Baa2
S&P	BBB-	BBB-

Each of these fall in the "investment grade" category, which is Triple B- or above.

Q. How do these ratings compare to other electric utilities?

A. According to AUS Utility Reports (Attachment 7), the Moody's and S&P ratings for the electric utilities they cover are as follows:

	<u>Rating</u>	<u>Moody's</u>	<u>S&P</u>
1			
2	Aaa/AAA	1	--
3	Aa2/AA	2	1
4	Aa3/AA-	1	--
5	A1/A+	6	3
6	A2/A	5	6
7	A3/A-	10	7
8	Baa1/BBB+	15	16
9	Baa2/BBB	13	15
10	Baa3/BBB-	5	8
11	Ba1/BB+	2	3
12	B2	1	--
13	Not Rated	4	4

Source: AUS Utility Reports, July 2007.

Note: The bold numbers reflect APS' current ratings.

This indicates that Pinnacle West Capital (APS) has bond ratings somewhat less than other electric utilities, but still within investment grade status.

Q. What are the current outlooks for APS?

A. The current outlooks for APS are as follows:

Fitch	Stable
Moody's	Stable
S&P	Stable

Q. What is the most recent change in the respective outlooks for APS?

A. The most recent change in outlook was favorable as follows:

Moody's	Negative to Stable	July 25, 2008
---------	--------------------	---------------

1 **Q. Why did Moody's revise APS' outlook from negative to stable?**

2 A. This revision was noted in a July 25, 2008 Moody's Global Credit Research Rating Action
3 (Attachment 8). In announcing the upgrade in outlook, Moody's noted the following:

4
5 *Moody's Investors Service changed the rating outlooks of Pinnacle West*
6 *Capital Corporation (Pinnacle, Baa3 senior unsecured) and its*
7 *subsidiaries, Arizona Public Service Company (APS, Baa2 senior*
8 *unsecured) and VNGS II Funding Corp. Inc. (PVNGS: Baa2, senior*
9 *secured lease obligation bonds) to stable from negative.*

10
11 *The stable outlook considers the companies' improving regulatory*
12 *environment and operating performance with financial results that are*
13 *expected to remain consistently within the range expected for integrated*
14 *utilities rated Baa. APS has begun to receive more supportive regulatory*
15 *decisions, including "new connection" fees allowing faster recovery for*
16 *new hookups plus a transmission cost adjustor and power supply adjustor*
17 *which has limited APS' exposure to fuel and purchased power fluctuations.*
18 *In addition, performance at the Palo Verde nuclear power plant has*
19 *improved and APS is making progress in identifying and improving the*
20 *safety and communication issues at the plant.*

21
22 *As a result of some improved timing on cost recoveries, Moody's now*
23 *expects APS and Pinnacle's cash flow credit metrics to remain at levels*
24 *comparable to those achieved in 2006 and 2007. This would place the*
25 *utility and parent in the mid-to-upper range of ratios for electric utilities*
26 *with medium business risk according to Moody's rating methodology for*
27 *global regulated electric utilities.*

28
29 **Q. Has S&P commented on APS in any recent reports?**

30 A. Yes, it has. In a June 25, 2008 RatingsDirect (Attachment 9), S&P affirmed APS' BBB-
31 corporate credit rating and also affirmed the Stable outlook. In affirming these factors,
32 S&P did acknowledge that "APS continued to face significant regulatory challenges."

33
34 S&P's Stable outlook for APS was described as follows:
35

1 *The stable outlook reflects our expectation that consolidated cash flow*
2 *volatility has been tamped down by the ACC's approval of a stronger PSA*
3 *that speeds the recovery of fuel costs, but consolidated financial*
4 *performance will continue to be challenged by regulatory lag at APS,*
5 *which could be moderated by APS' pending interim rate request. The*
6 *stable outlook is premised on no meaningful adverse changes in the*
7 *company's business risks and continued financial performance that is not*
8 *significantly weaker than 2007 results. Equity issuances will be expected*
9 *to balance the capital structure of the company as APS continues to invest*
10 *heavily in infrastructure. Ratings could be lowered to speculative grade if*
11 *the company is not able to overcome the challenge of ensuring timely*
12 *recovery of its prudently incurred costs through rate increases approved by*
13 *the ACC. Given these challenges, and that presented by NRC scrutiny of*
14 *Palo Verde, we see little potential for positive movement in the ratings or*
15 *outlook.*

16
17 This quote does indicate S&P's concerns with APS' challenges. On the other hand, S&P
18 cites recent Commission approval of a stronger PSA that speeds recovery of fuel costs.
19 Notably, even though it cited the Interim Rates filing, S&P did not express any prediction
20 of a downgrade of APS in the absence of Interim Rates being approved. I also note that
21 APS' stable outlook reflects these factors

22
23 **Q. How should the S&P financial ratios, as cited above, apply to APS?**

24 **A. According to a June 2, 2008 publication by S&P titled "Issuer Ranking" U.S. Regulated**
25 **Electric Utilities, Strongest to Weakest" (Attachment 10) APS has the following profiles:**

26		
27	Business Profile	Strong
28	Financial Profile	Aggressive
29		

30 Based on these respective profiles, S&P indicates, in a November 30, 2007 RatingsDirect
31 (Attachment 4), the following "guidelines" for a utility with APS' financial risk profile:

32		
33	FFO/debt	10% - 30%
34	FFO/interest	2.0x - 3.5x
35	Total debt/capital	45% - 60%

1 **Q. Mr. Brandt states, on page 12, lines 6-8, of his affidavit that “the key financial metric**
2 **examined by the credit rating agencies is the FFO/Debt ratio of 18% to 28%.” Does**
3 **this statement conform to your review of S&P and other rating agency reports and**
4 **stated criteria?**

5 A. No, it does not. As I have shown above, the rating agencies use a number of criteria, both
6 quantitative and qualitative, in determining ratings. I have seen no indications that either
7 S&P or any other rating agency place primary reliance on any single financial metric in
8 setting ratings.

9
10 **Q. Are there any other factors that may impact the financial metrics of APS?**

11 A. Yes. The Commission recently approved an application of Pinnacle West Capital to sell
12 up to \$400 million of new equity and infuse this into APS. The addition of \$400 million
13 of new equity into APS should have the impact of improving the FFO/Debt ratio of the
14 company, as well as the total debt/total capital metric. I note that this financing was
15 approved by the Commission on August 6, 2008, or after the date of Mr. Brandt’s affidavit
16 (June 6, 2008). As a result, any impact of the infusion on APS’ financial metrics is not
17 included in Mr. Brandt’s affidavit.

18
19 A demonstration of the positive impact of an equity infusion is provided in the response to
20 Data Request Staff Interim 2.26 (Attachment 11). This response indicates that a prior
21 equity infusion of \$460 million in 2005 and 2006 had the impact of raising the FFO/Debt
22 ratio of the Company.
23

PINNACLE WEST CAPITAL STOCK RANKINGS

Q. Are there other indicators of financial strength and viability that can be used to compare electric utilities?

A. Yes, there are. These include:

Value Line Safety ²	(Safety rankings are in a range of 1 to 5, with 1 representing the highest safety or lowest risk)
--------------------------------	---

Value Line Beta ²	(Beta reflects the variability of a particular stock, relative to the market as a whole. A stock with a beta of 1.0 moves in concert with the market, a stock with a beta below 1.0 is less variable than the market, and a stock with a beta above 1.0 is more variable than the market.)
------------------------------	--

Value Line Financial Strength ²	(Financial strengths range from C to A++, with the latter representing the highest level.)
--	--

Standard & Poor's Stock Ranking ³	(Common stock rankings range from D to A+, with the latter representing the highest level.)
--	---

Each of these indicators can be used to compare various companies, including electric utilities such as Pinnacle West Capital, with other companies.

Q. What are the respective financial indicators of Pinnacle West Capital and the electric utility industry?

A. Pinnacle West Capital's indicators (Attachment 14) and the averages for the electric utility industry are currently as follows:

² Source: Attachment 12.

³ Source: Attachment 13.

	<u>PWC</u>	<u>Elec. Util.</u>
Value Line Safety	2	2.3
Value Line Beta	.80	.87
Value Line Financial Strength	A	
S&P Stock Ranking	B+	

Q. How do these compare to other electric utilities?

A. This comparison is shown on Schedule 1 of Exhibit___(DCP-1). This reveals the following comparisons:

Value Line Safety – Pinnacle West Capital’s 2 (on a scale of 1 to 5 with 1 being the highest level of Safety – note that Pinnacle West has a Safety of 1 until August 8, 2008) falls in the upper middle range of electric utilities. Schedule 1 indicates that virtually all of the electric utilities have a Safety of 1, 2 or 3, with an average of 2.3. The number of companies with each rating is:

1	8
2	27
3	23
4	--
5	1

This is reflective of slightly below-average risk for Pinnacle West Capital.

Value Line Beta – Pinnacle West Capital’s .80 beta is slightly less than the electric industry average beta of .87. This is also indicative of slightly less risk.

1 Value Line Financial Strength – Pinnacle West Capital's Financial Strength is A,
2 which is slightly above average for the electric industry. The number of
3 companies with each rating is:

4		
5	A+	3
6	A	18
7	B++	17
8	B+	10
9	B	8
10	C++	1
11	C+	--
12	C	1
13		

14 This reflects below-average risk of Pinnacle West Capital.

15
16 S&P Stock Ranking – Pinnacle West Capital's B+ ranking is above the average of
17 the electric utility industry. The number of companies with each ranking is:

18		
19	A	1
20	A-	9
21	B+	14
22	B	28
23	B-	--
24	C	2
25		

26 This also reflects below-average risk of Pinnacle West Capital.

27
28 Collectively, these indicators portray Pinnacle West Capital as a below-risk electric utility
29 holding company.
30

1 **CONCLUSION**

2 **Q. Please summarize your testimony and conclusions.**

3 A. The affidavit of APS witness Brandt reflects the Company's position that Interim Rates
4 are necessary in order to avoid a ratings downgrade to non-investment grade status. The
5 Company's prediction of ratings downgrades, in turn, is based on the claim that a single
6 financial metric (FFO/Debt) is the primary factor used by the rating agencies in assigning
7 ratings to individual companies such as APS.

8
9 My testimony provides a more comprehensive assessment of what the rating agencies
10 indicate, in their published reports, the methodologies and factors that are considered in
11 the ratings process. It is apparent, based on the rating agencies' published reports, that a
12 large number of factors are considered in assigning ratings. These include both qualitative
13 and quantitative factors. There is no indication that a single financial metric, such as
14 FFO/Debt, is a primary determinant in the rating process.

15
16 My testimony also indicates that APS has ratings by Fitch and Moody's of "middle B"
17 (BBB by Fitch and Baa2 by Moody's), which are two "notches" above the non-investment
18 grade status. S&P's ratings are BBB-, which is a single "notch" above non-investment
19 grade status. All three rating agencies have "outlooks" for APS of "Stable". A typical
20 company in danger of being downgraded would be expected to have an Outlook of either
21 "Negative" or "Under Review." This information does not provide any significant
22 indication of a danger of APS being downgraded to non-investment grade status.

23
24 The stock rankings of APS' parent – Pinnacle West Capital – are typically in the above-
25 average categories for electric utilities. This is indicative of below-average risk for APS
26 and Pinnacle West Capital.

1 Based upon these analyses, it is my conclusion that the rationale provided by APS in
2 support of its request for Interim Rates is not persuasive and does not provide a proper
3 justification for Interim Rates based on a need to maintain investment grade ratings.

4

5 **Q. Does this conclude your pre-filed testimony?**

6 **A. Yes, it does.**

ELECTRIC UTILITIES FOLLOWED BY VALUE LINE INVESTMENT SURVEY COMPARISON OF FINANCIAL INDICATORS

COMPANY	ELECTRIC SUB	EQUITY RATIO Value Line	VALUE LINE			S&P STOCK RANKING S&P	S&P BOND RATING AUS	MOODY'S BOND RATING AUS
			SAFETY	BETA	FIN STR			
ALLETE	Minnesota Power	64.4%	2	0.95	A	B+	A-	Baa1
Alliant Energy	WPL, IES & ISP	61.9%	2	0.80	A	B	A-	A2
Allegheny Energy		39.0%	3	1.15	B++	B	BBB+	Baa2
Ameren Corp.	Un EI & CIPSCO	53.4%	2	0.80	A	A-	BBB	Baa2
American Electric Power Company	AEP & C&SW	41.2%	3	0.85	B++	B	BBB	Baa1
Aquila, Inc.	UtiliCorp	56.7%	5	1.35	C	C	B+	Ba3
Avista Corp.	Wash Water Pwr	59.0%	3	0.95	B+	B	BBB+	Baa2
Black Hills Corp.	Black Hills Power	63.2%	3	0.90	B+	B	BBB	Baa1
CMS Energy Corp.	Consumers Energy	25.9%	3	1.15	B	C	BBB	Baa1
CH Energy Group, Inc.	Cen Hud G & E	55.2%	1	0.90	A	A-	A	A2
CenterPoint Energy, Inc.	Houston Electric	17.8%	3	0.95	B	B	NR	Baa2
Central Vermont Public Service Corp		60.6%	3	1.10	B	B+	BBB+	NR
Cleco Corp.	Cen La Elec	57.0%	3	1.00	B+	B+	BBB	A3
Consolidated Edison, Inc.		53.1%	1	0.75	A++	B+	A	A1
Constellation Energy Group	Baltimore Gas & Elec	52.4%	2	0.90	A	B+	BBB+	Baa2
DPL, Inc.	Dayton P&L	35.8%	3	0.75	B	B+	A-	A2
Dominion Resources	VA Power	41.1%	2	0.80	B++	B+	A-	Baa1
DTE Energy Company	Detroit Edison	45.6%	3	0.75	B+	B	A-	A3
Duke Energy Corp.		69.1%	2	NMF	A	B	A	A3
Edison International	So. Cal Edison	46.0%	3	0.85	B++	B	A	A2
El Paso Electric Co.		50.4%	2	0.90	B++	B	BBB	Baa2
Empire District Electric Company		49.9%	3	0.85	B+	B	BBB+	Baa1
Energy East Corp.	NYSEG, RG&E, CMP	45.1%	2	0.75	B++	B+	A-	A3
Entergy Corp.		43.9%	2	0.85	A	A-	A-	Baa2
Exelon Corp.	PECO & Comm Ed	45.7%	1	0.85	A+	B+	A-	A3
FPL Group, Inc.	Florida P & L	48.8%	1	0.80	A+	A-	A	Aa3
FirstEnergy Corp.	OhEd, CIE, Tol, MeEd, JC	50.3%	2	0.80	A	A-	BBB	Baa2
Great Plains Energy Inc.	KCP&L	57.9%	2	0.75	A	B	BBB	A3
Hawaiian Electric Industries, Inc.	Hawaiian Elec. Co.	51.0%	2	0.70	B++	B	BBB	Baa2
IDACORP	Idaho Power	51.1%	3	0.90	B+	B	A-	A3
Integrus Energy Group	Wisconsin Pub Ser	58.3%	2	0.80	B++	A-	A-	A1
ITC Holdings Corp.			3	0.85	B	NR		
MDU Resources Group	Montana Dak Util	68.4%	1	0.95	A+	A	BBB+	A2
MGE Energy Inc.	Madison Gas & Elec	64.8%	1	0.90	A	B+	AA-	Aa2
NiSource Inc.	NIPSCO	47.6%	3	0.90	B+	B	BBB-	Baa2
Northeast Utilities	NU sys	48.8%	3	0.75	B+	B	BBB+	Baa1
NSTAR	NSTAR Elec.	40.1%	1	0.80	A	A-	AA-	A1
OGE Energy Corp.	Okla Gas & Elec	55.6%	2	0.80	A	A-	BBB+	Baa2
Otter Tail Corp	Otter Tail Power	59.4%	2	0.90	A	A-	BBB+	A3
PG&E Corp.	Pacific G & E	50.4%	2	0.80	B++	B	BBB+	A3
PPL Corp	PPL Utilities	43.6%	2	0.90	B++	B+	A-	A3
Pinnacle West Capital Corp.	Ariz Pub Ser	53.0%	2	0.80	A	B+	BBB-	Baa2
Pepco Holdings, Inc.	Pepco & Conectiv	45.9%	3	0.90	B	B	BBB+	Baa1
Portland General		46.5%	2	0.85	B++	NR	A	Baa1
Progress Energy	CP&L & FI Prog	48.8%	2	0.80	B++	B	A-	A2
Public Service Enterprise Group, Inc.	PSE&G	45.5%	3	0.90	B++	B+	A-	A3
PNM Resources	P S of New Mexico	57.6%	3	0.85	B+	B	BBB-	Baa2
Puget Energy, Inc.	Puget Sound Energy	48.5%	3	0.80	B+	B	BBB+	Baa2
SCANA Corp.	SCE&G	49.7%	2	0.85	A	B	A-	A2
Sempra Energy	San Diego G & E	63.7%	2	0.90	A	B+	A+	A1
Sierra Pacific Resources	Nev Pwr & SP Pwr	42.0%	3	1.05	B	B	BB+	Baa3
Southern Company	GA Pwr, Ala Pwr, M Pw	44.9%	1	0.70	A	A-	A	A2
TECO Energy, Inc.	Tampa Elec	39.0%	3	0.95	B	B	BBB-	Baa2
UniSource Energy Corp.	Tucson Electric Power	31.2%	3	0.60	C++	B	BBB	Baa2
UIL Holdings	United Illum	49.2%	2	0.90	B++	B	NR	Baa2
Vectren	Ind Ener & SIGCORP	49.8%	2	0.90	A	B+	A	A3
Westar Energy, Inc.	KP&L	48.9%	2	0.85	B++	B	BBB-	Baa2
Wisconsin Energy Corp.	We Energies	49.2%	2	0.80	B++	B	A-	Aa3
Xcel Energy Inc.	N S Pwr, PSC, SWPS	49.4%	2	0.75	B++	B	A-	A3
Average		49.9%	2.31	0.87				

Sources: Value Line and Standard & Poor's Stock Guide.

BACKGROUND AND EXPERIENCE PROFILE
DAVID C. PARCELL, MBA, CRRA
PRESIDENT/SENIOR ECONOMIST

EDUCATION

1985	M.B.A., Virginia Commonwealth University
1970	M.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech)
1969	B.A., Economics, Virginia Polytechnic Institute and State University, (Virginia Tech)

POSITIONS

2007-Present	President, Technical Associates, Inc.
1995-2007	Executive Vice President and Senior Economist, Technical Associates, Inc.
1993-1995	Vice President and Senior Economist, C. W. Amos of Virginia
1972-1993	Vice President and Senior Economist, Technical Associates, Inc.
1969-1972	Research Economist, Technical Associates, Inc.
1968-1969	Research Associate, Department of Economics, Virginia Polytechnic Institute and State University

ACADEMIC HONORS

Omicron Delta Epsilon - Honor Society in Economics
Beta Gamma Sigma - National Scholastic Honor Society of Business Administration
Alpha Iota Delta - National Decision Sciences Honorary Society
Phi Kappa Phi - Scholastic Honor Society

PROFESSIONAL DESIGNATIONS

Certified Rate of Return Analyst - Founding Member
Member of Association for Investment Management and Research (AIMR)

RELEVANT EXPERIENCE

Financial Economics -- Advised and assisted many Virginia banks and savings and loan associations on organizational and regulatory matters. Testified approximately 25 times before the Virginia State Corporation Commission and the Regional Administrator of National Banks on matters related to branching and organization for banks, savings and loan associations, and consumer finance companies. Advised financial institutions on interest rate structure and loan maturity. Testified before Virginia State Corporation Commission on maximum rates for consumer finance companies.

Testified before several committees and subcommittees of Virginia General Assembly on numerous banking matters.

Clients have included First National Bank of Rocky Mount, Patrick Henry National Bank, Peoples Bank of Danville, Blue Ridge Bank, Bank of Essex, and Signet Bank.

Published articles in law reviews and other periodicals on structure and regulation of banking/financial services industry.

Utility Economics -- Performed numerous financial studies of regulated public utilities. Testified in over 300 cases before some thirty state and federal regulatory agencies.

Prepared numerous rate of return studies incorporating cost of equity determination based on DCF, CAPM, comparable earnings and other models. Developed procedures for identifying differential risk characteristics by nuclear construction and other factors.

Conducted studies with respect to cost of service and indexing for determining utility rates, the development of annual review procedures for regulatory control of utilities, fuel and power plant cost recovery adjustment clauses, power supply agreements among affiliates, utility franchise fees, and use of short-term debt in capital structure.

Presented expert testimony before federal regulatory agencies Federal Energy Regulatory Commission, Federal Power Commission, and National Energy Board (Canada), state regulatory agencies in Alabama, Alaska, Arizona, Arkansas, California, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, Ohio, Oklahoma, Ontario (Canada), Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, West Virginia, Washington, Wisconsin, and Yukon Territory (Canada).

Published articles in law reviews and other periodicals on the theory and purpose of regulation and other regulatory subjects.

Clients served include state regulatory agencies in Alaska, Arizona, Delaware, Missouri, North Carolina, Ontario (Canada), and Virginia; consumer advocates and attorneys general in Alabama, Arizona, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maryland, Nevada, New Mexico, Ohio, Oklahoma, Pennsylvania, South Carolina, Texas, Utah, Vermont, Virginia, and West Virginia; federal agencies including Defense Communications Agency, the Department of Energy, Department of the Navy, and General Services Administration; and various organizations such as Bath Iron Works, Illinois Citizens' Utility Board, Illinois Governor's Office of Consumer Services, Illinois Small Business Utility Advocate, Wisconsin's Environmental Decade, Wisconsin's Citizens Utility Board, and Old Dominion Electric Cooperative.

Insurance Economics -- Conducted analyses of the relationship between the investment income earned by insurance companies on their portfolios and the premiums charged for insurance. Analyzed impact of diversification on financial strength of Blue Cross/Blue Shield Plans in Virginia.

Conducted studies of profitability and cost of capital for property/casualty insurance industry. Evaluated risk of and required return on surplus for various lines of insurance business.

Presented expert testimony before Virginia State Corporation Commission concerning cost of capital and expected gains from investment portfolio. Testified before insurance bureaus of Maine, New Jersey, North Carolina, Rhode Island, South Carolina and Vermont concerning cost of equity for insurance companies.

Prepared cost of capital and investment income return analyses for numerous insurance companies concerning several lines of insurance business. Analyses used by Virginia Bureau of Insurance for purposes of setting rates.

Special Studies -- Conducted analyses which evaluated the financial and economic implications of legislative and administrative changes. Subject matter of analyses include returnable bottles, retail beer sales, wine sales regulations, taxi-cab taxation, and bank regulation. Testified before several Virginia General Assembly subcommittees.

Testified before Virginia ABC Commission concerning economic impact of mixed beverage license.

Clients include Virginia Beer Wholesalers, Wine Institute, Virginia Retail Merchants Association, and Virginia Taxicab Association.

Franchise, Merger & Anti-Trust Economics -- Conducted studies on competitive impact on market structures due to joint ventures, mergers, franchising and other business restructuring. Analyzed the costs and benefits to parties involved in mergers. Testified in federal courts and before banking and other regulatory bodies concerning the structure and performance of markets, as well as on the impact of restrictive practices.

Clients served include Dominion Bankshares, asphalt contractors, and law firms.

Transportation Economics -- Conducted cost of capital studies to assess profitability of oil pipelines, trucks, taxicabs and railroads. Analyses have been presented before the Federal Energy Regulatory Commission and Alaska Pipeline Commission in rate proceedings. Served as a consultant to the Rail Services Planning Office on the reorganization of rail services in the U.S.

Economic Loss Analyses -- Testified in federal courts, state courts, and other adjudicative forums regarding the economic loss sustained through personal and business injury whether due to bodily harm, discrimination, non-performance, or anticompetitive practices. Testified on economic loss to a

commercial bank resulting from publication of adverse information concerning solvency. Testimony has been presented on behalf of private individuals and business firms.

MEMBERSHIPS

American Economic Association
Virginia Association of Economists
Richmond Society of Financial Analysts
Financial Analysts Federation
Society of Utility and Regulatory Financial Analysts
 Board of Directors 1992-2000
 Secretary/Treasurer 1994-1998
 President 1998-2000

RESEARCH ACTIVITY

Books and Major Research Reports

"Stock Price As An Indicator of Performance," Master of Arts Thesis, Virginia Tech, 1970

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CORPORATE FINANCE

Investment Grade

Moody's is the leading rating agency in the investment-grade corporate bond sector, with over 2,000 issuers rated from Aaa to Baa globally. We rate an estimated 90% of public market bonds and our in-depth issuer reports cover 80% of the market. Moody's Investment-Grade Research service includes access to all Moody's analysts globally, timely rating updates, frequent industry reports, issuer specific special commentary, investor conferences...more

HIGHLIGHTS

1H08 tobacco industry report – outlook stable

The industry's profitability and cash-flow levels should remain relatively strong as price increases stick, supporting our stable outlook on credit fundamentals, we conclude. That said, we are concerned about declining cigarette-shipment volumes, especially as consumers look for ways to save money amid a weakening economy. Financial policies, including share repurchases and debt-financed acquisitions, may also become more aggressive as litigation risk moderates. *August report... more*

Survey: Rise in late payments to LDCs, but liquidity holds

Rising natural gas prices, deterioration in the housing market, and general economic weakness have put a strain on U.S. consumers, leading to above-average increases in past due payments, according to a survey of 31 Moody's-rated local gas distribution companies or LDCs. The study finds that these forces may not bode well for the 2008-2009 winter heating season. *August 7 press release... more*

Positive outlook for Japanese game software sector

The industry outlook for Japan's consumer game software sector is positive, as the launch of new consoles since late-2006 drives growth. In addition, activity has peaked domestically and is expected to remain strong overseas. By contrast, the rating outlook is stable with no major rating actions expected over the coming 12 months, based on our view that rated companies will minimize fluctuations in both revenue and earnings. *August 7 press release... more*

Corporate Finance

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MERGENT BOND RECORD

MOODY'S® BOND RATINGS

Purpose: The system of rating securities was originated by John Moody in 1909.

The purpose of Moody's® Ratings is to provide the investors with a simple system of gradation by which the relative investment qualities of bonds may be noted.

Rating Symbols: Gradations of investment quality are indicated by rating symbols, each symbol representing a group in which the quality characteristics are broadly the same. There are nine symbols as shown below, from that used to designate least investment risk (i.e., highest investment quality) to that denoting greatest investment risk (i.e., lowest investment quality):

Aaa Aa A Baa Ba B Caa Ca C

For explanation of municipal rating symbols, in particular the A 1 and Baa 1 groups see page 6

Absence of Rating: Where no rating has been assigned or where a rating has been suspended or withdrawn, it may be for reasons unrelated to the quality of the issue.

Should no rating be assigned, the reason may be one of the following:

1. An application for rating was not received or accepted.
2. The issue or issuer belongs to a group of securities or companies that are not rated as a matter of policy.
3. There is a lack of essential data pertaining to the issue or issuer.
4. The issue was privately placed, in which case the rating is not published in Moody's® publications.

Suspension or withdrawal may occur if new and material circumstances arise, the effects of which preclude satisfactory analysis; if there is no longer available reasonable up-to-date data to permit a judgment to be formed; if a bond is called for redemption; or for other reasons.

Changes in Rating: The quality of most bonds is not fixed and steady over a period of time, but tends to undergo change. For this reason changes in ratings occur so as to reflect these variations in the intrinsic position of individual bonds.

A change in rating may thus occur at any time in the case of an individual issue. Such rating change should serve notice that Moody's® observes some alteration in the investment risks of the bond or that the previous rating did not fully reflect the quality of the bond as now seen. While because of their very nature, changes are to be expected more frequently among bonds of lower ratings than among bonds of higher ratings, nevertheless the user of bond ratings should keep close and constant check on all ratings—both high and low ratings—thereby to be able to note promptly any signs of change in investment status which may occur.

Limitations to Uses of Ratings: Bonds carrying the same rating are not claimed to be of absolutely equal quality. In a broad sense they are alike in position, but since there are a limited number of rating classes used in grading thousands of bonds, the symbols cannot reflect the fine shadings of risks which actually exist. Therefore, it should be evident to the user of ratings that two bonds identically rated are unlikely to be precisely the same in investment quality.

As ratings are designed exclusively for the purpose of grading bonds according to their investment qualities, they should not be used alone as a basis for investment operations. For example, they have no value in forecasting the direction of future trends of market price. Market price movements in bonds are influenced not only by the quality of individual issues but also by changes in money rates and general economic trends, as well as by the length of maturity, etc. During its life even the best quality bond may have wide price movements, while its high investment status remains unchanged.

The matter of market price has no bearing whatsoever on the determination of ratings which are not to be construed as recommendations with respect to "attractiveness." The attractiveness of a given bond may depend on its yield, its maturity date or other factors for which the investor may search, as well as on its investment quality, the only characteristic to which the rating refers.

Since ratings involve judgments about the future, on the one hand, and since they are used by investors as a means of protection, on the other, the effort is made when assigning ratings to look at "worst" potentialities in the "visible" future, rather than solely at the past record and the status of the present. Therefore, investors using the rating should not expect to find in them a reflection of statistical factors alone, since they are an appraisal of long term risks, including the recognition of many non-statistical factors.

Though ratings may be used by the banking authorities to classify bonds in their bank examination procedure, Moody's® Ratings are not made with these bank regulations in view. Moody's® Investors Service's own judgment as to desirability or non-desirability of a bond for bank investment purposes is not indicated by Moody's® Ratings.

Moody's® Ratings represent the mature opinion of Moody's® Investors Service, Inc., as to the relative investment classification of bonds. As such, they should be used in conjunction with the description and statistics appearing in Moody's® Manuals. Reference should be made to these statements for information regarding the issuer. Moody's® Ratings are not commercial credit ratings. In no case is default or receivership to be imputed unless expressly so stated in the Manual.

MOODY'S® SHORT-TERM DEBT RATINGS

Moody's® short-term debt ratings are opinions of the ability of issuers to repay punctually senior debt obligations. These obligations have an original maturity not exceeding one year, unless explicitly noted.

Moody's® employs the following three designations, all judged to be investment grade, to indicate the relative repayment ability of rated issuers:

Prime-1

Issuers rated Prime-1 (or supporting institutions) have a superior ability for repayment of senior short-term debt obligations. Prime-1 repayment ability will often be evidenced by many of the following characteristics:

- Leading market positions in well-established industries.
- High rates of return on funds employed.
- Conservative capitalization structure with moderate reliance on debt and ample asset protection.
- Broad margins in earnings coverage of fixed financial charges and high internal cash generation.
- Well-established access to a range of financial markets and assured sources of alternate liquidity.

Prime-2

Issuers rated Prime-2 (or supporting institutions) have a strong ability for repayment of senior short-term debt obligations. This will normally be evidenced by many of the characteristics cited above but to a lesser degree. Earnings trends and coverage ratios, while sound, may be more subject to variation. Capitalization characteristics, while still appropriate, may be more affected by external conditions. Ample alternate liquidity is maintained.

Prime-3

Issuers rated Prime-3 (or supporting institutions) have an acceptable ability for repayment of senior short-term obligations. The effect of industry characteristics and market compositions may be more pronounced. Variability in earnings and profitability may result in changes in the level of debt protection measurements and may require relatively high financial leverage. Adequate alternate liquidity is maintained.

Not Prime

Issuers rated Not Prime do not fall within any of the Prime rating categories.

Moody's® makes no representation that rated bank or insurance company obligations are exempt from the registration under the U.S. Securities Act of 1933 or issued in conformity with any other applicable law or regulation. Nor does Moody's® represent that any specific bank or insurance company obligation is legally enforceable or a valid senior obligation of a rated issuer.

If an issuer represents to Moody's® that its short-term debt obligations are supported by the credit of another entity or entities, then the name or names of such supporting entity or entities are listed within the parentheses beneath the name of the issuer, or there is a footnote referring the reader to another page for the name or names of the supporting entity or entities. In assigning ratings to such issuers, Moody's® evaluates the financial strength of the affiliated corporations, commercial banks, insurance companies, foreign governments or other entities, but only as one factor in the total rating assessment. Moody's® makes no representation and gives no opinion on the legal validity or enforceability of any support arrangement.

Moody's® ratings are opinions, not recommendations, to buy or sell, and their accuracy is not guaranteed. A rating should be weighed solely as one factor in an investment decision and you should make your own study and evaluation of any issuer whose securities or debt obligations you consider buying or selling.

BRANCH (DEPOSIT) OBLIGATIONS

Obligations of a branch of a bank are considered to be domiciled in the country in which the branch is located. Unless noted as an exception, Moody's® rating on a bank's ability to repay senior obligations extends only to branches located in countries which carry a Moody's® Sovereign Rating for Bank Deposits. Such branch obligations are rated at the lower of the bank's rating or Moody's® Sovereign Rating for Bank Deposits for the country in which the branch is located.

When the currency in which an obligation is denominated is not the same as the currency of the country in which the obligation is domiciled, Moody's® ratings do not incorporate an opinion as to whether payment of the obligation will be affected by actions of the government controlling the currency of denomination. In addition, risks associated with bilateral conflicts between an investor's home country and either the issuer's home country or the country where an issuer's branch is located are not incorporated into Moody's® short-term debt ratings.

MOODY'S® CORPORATE LONG-TERM RATINGS

Aaa

Bonds and preferred stock which are rated Aaa are judged to be of the best quality. They carry the smallest degree of investment risk and are generally referred to as "gilt edged." Interest payments are protected by a large or by an exceptionally stable margin and principal is secure. While the various protective elements are likely to change, such changes as can be visualized are most unlikely to impair the fundamentally strong position of such issues.

MERGENT BOND RECORD

Aaa

Bonds and preferred stock which are rated **Aaa** are judged to be of high quality by all standards. Together with the **Aaa** group they comprise what are generally known as high-grade bonds. They are rated lower than the best bonds because margins of protection may not be as large as in **Aaa** securities or fluctuation of protective elements may be of greater amplitude or there may be other elements present which make the long-term risk appear somewhat larger than the **Aaa** securities.

A

Bonds and preferred stock which are rated **A** possess many favorable investment attributes and are to be considered as upper-medium-grade obligations. Factors giving security to principal and interest are considered adequate, but elements may be present which suggest a susceptibility to impairment some time in the future.

Baa

Bonds and preferred stock which are rated **Baa** are considered as medium-grade obligations, (i.e., they are neither highly protected nor poorly secured). Interest payments and principal security appear adequate for the present but certain protective elements may be lacking or may be characteristically unreliable over any great length of time. Such bonds lack outstanding investment characteristics and in fact have speculative characteristics as well.

Ba

Bonds and preferred stock which are rated **Ba** are judged to have speculative elements; their future cannot be considered as well-assured. Often the protection of interest and principal payments may be very moderate, and thereby not well safeguarded during both good and bad times over the future. Uncertainty of position characterizes bonds in this class.

B

Bonds and preferred stock which are rated **B** generally lack characteristics of the desirable investment. Assurance of interest and principal payments or of maintenance of other terms of the contract over any long period of time may be small.

Caa

Bonds and preferred stock which are rated **Caa** are of poor standing. Such issues may be in default or there may be present elements of danger with respect to principal or interest.

Ca

Bonds and preferred stock which are rated **Ca** represent obligations which are speculative in a high degree. Such issues are often in default or have other marked shortcomings.

C

Bonds and preferred stock which are rated **C** are the lowest rated class of bonds, and issues so rated can be regarded as having extremely poor prospects of ever attaining any real investment standing.

Moody's bond ratings, where specified, are applied to senior bank obligations and insurance company senior policyholder and claims obligations with an original maturity in excess of one year. Obligations relying upon support mechanisms such as letters of credit and bonds of indemnity are excluded unless explicitly rated.

Moody's assigns ratings to individual long-term debt securities issued from medium-term note (MTN) programs, in addition to indicating ratings to MTN programs themselves. Notes issued under MTN programs with such indicated ratings are rated at issuance at the rating applicable to all pari passu notes issued under the same program, at the program's relevant indicated rating, provided such notes do not exhibit any of the following characteristics listed below. For notes with any of the following characteristics, the rating of the individual note may differ from the indicated rating of the program:

1. Notes containing features which link the cash flow and/or market value to the credit performance of any third party or parties.
2. Notes allowing for negative coupons, or negative principal.
3. Notes containing any provision which could obligate the investor to make any additional payments.

Market participants must determine whether any particular note is rated; and if so, at what rating level. Moody's encourages market participants to contact Moody's Ratings Desk directly if they have questions regarding ratings for specific notes issued under a medium-term-note program.

MOODY'S MUTUAL FUND RATINGS

Moody's Money Market and Bond Fund Ratings are opinions of the investment quality of shares in mutual funds and similar investment vehicles which principally invest in short-term and long-term fixed income obligations, respectively. As such, these ratings incorporate Moody's assessment of a fund's published investment objectives and policies, the creditworthiness of the assets held by the fund, as well as the management characteristics of the fund. The ratings are not intended to consider the prospective performance of a fund with respect to appreciation, volatility of net asset value, or yield. The rating definitions are as follows:

Aaa

Money Market Funds and Bond Funds rated **Aaa** are judged to be of an investment quality similar to **Aaa**-rated fixed income obligations, that is, they are judged to be of the best quality.

Aa

Money Market Funds and Bond Funds rated **Aa** are judged to be of an investment quality similar to **Aa**-rated fixed income obligations, that is, they are judged to be of high quality by all standards.

A

Money Market Funds and Bond Funds rated **A** are judged to be of an investment quality similar to **A**-rated fixed income obligations, that is, they are judged to possess many favorable investment attributes and are considered as upper-medium-grade investment vehicles.

Baa

Money Market Funds and Bond Funds rated **Baa** are judged to be of an investment quality similar to **Baa**-rated fixed income obligations, that is, they are considered as medium-grade investment vehicles.

Ba

Money Market Funds and Bond Funds rated **Ba** are judged to be of an investment quality similar to **Ba**-rated fixed income obligations, that is, they are judged to have speculative elements.

B

Money Market Funds and Bond Funds rated **B** are judged to be of an investment quality similar to **B**-rated fixed income obligations, that is, they generally lack characteristics of the desirable investment.

MOODY'S FUND MARKET RISK RATINGS

Money Market and Bond Mutual Funds

Moody's Mutual Fund Market Risk (MR) ratings are opinions of the relative degree of volatility of a rated fund's net asset value (NAV). In forming an opinion on the fund's future price volatility, Moody's analysts consider risk elements that may have an effect on a fund's net asset value such as: interest rate risk, prepayment and extension risk, liquidity and concentration risks, currency risk and derivatives risk. The ratings are not intended to consider prospective performance of a fund with respect to price appreciation or yield.

MR1

Money Market Funds and Bond Funds rated **MR1** are judged to have very low sensitivity to changing interest rates and other market conditions.

MR2

Money Market Funds and Bond Funds rated **MR2** are judged to have low sensitivity to changing interest rates and other market conditions.

MR3

Money Market Funds and Bond Funds rated **MR3** are judged to have moderate sensitivity to changing interest rates and other market conditions.

MR4

Money Market Funds and Bond Funds rated **MR4** are judged to have high sensitivity to changing interest rates and other market conditions.

MR5

Money Market Funds and Bond Funds rated **MR5** are judged to have very high sensitivity to changing interest rates and other market conditions.

Note: A "+" modifier appended to the **MR1** rating category denotes constant NAV money market funds and other qualifying funds.

MOODY'S INSURANCE FINANCIAL STRENGTH RATINGS

Moody's Insurance Financial Strength Ratings are opinions of the ability of insurance companies to repay punctually senior policyholder claims and obligations. Specific obligations are considered unrated unless individually rated because the standing of a particular insurance obligation would depend on an assessment of its relative standing under those laws governing both the obligation and the insurance company. It is important to note that Moody's makes no representation that rated insurance company obligations are exempt from registration under the U.S. Securities Act of 1933 or issued in conformity with any other applicable law or regulation. Nor does Moody's represent that any specific insurance company obligation is legally enforceable or a valid senior obligation of a rated issuer.

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U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

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U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

The electric, gas, and water utility ratings ranking lists published today by Standard & Poor's U.S. Utilities & Infrastructure Ratings practice are categorized under the business risk/financial risk matrix used by the Corporate Ratings group. This is designed to present our rating conclusions in a clear and standardized manner across all corporate sectors. Incorporating utility ratings into a shared framework to communicate the fundamental credit analysis of a company furthers the goals of transparency and comparability in the ratings process. Table 1 shows the matrix.

Table 1

Business Risk/Financial Risk					
Business Risk Profile	Financial Risk Profile				
	Minimal	Modest	Intermediate	Aggressive	Highly leveraged
Excellent	AAA	AA	A	BBB	BB
Strong	AA	A	A-	BBB-	BB-
Satisfactory	A	BBB+	BBB	BB+	B+
Weak	BBB	BBB-	BB+	BB-	B
Vulnerable	BB	B+	B+	B	B-

The utilities rating methodology remains unchanged, and the use of the corporate risk matrix has not resulted in any changes to ratings or outlooks. The same five factors that we analyzed to produce a business risk score in the familiar 10-point scale are used in determining whether a utility possesses an "Excellent," "Strong," "Satisfactory," "Weak," or "Vulnerable" business risk profile:

- Regulation,
- Markets,
- Operations,
- Competitiveness, and
- Management.

Regulated utilities and holding companies that are utility-focused virtually always fall in the upper range ("Excellent" or "Strong") of business risk profiles. The defining characteristics of most utilities--a legally defined service territory generally free of significant competition, the provision of an essential or near-essential service, and the presence of regulators that have an abiding interest in supporting a healthy utility financial profile--underpin the business risk profiles of the electric, gas, and water utilities.

As the matrix concisely illustrates, the business risk profile loosely determines the level of financial risk appropriate for any given rating. Financial risk is analyzed both qualitatively and quantitatively, mainly with financial ratios and other metrics that are calculated after various analytical adjustments are performed on financial statements prepared under GAAP. Financial risk is assessed for utilities using, in part, the indicative ratio ranges in table 2.

U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

Table 2

Financial Risk Indicative Ratios - U.S. Utilities

(Fully adjusted, historically demonstrated, and expected to consistently continue)

	Cash flow		Debt leverage
	(FFO/debt) (%)	(FFO/interest) (x)	(Total debt/capital) (%)
Modest	40 - 60	4.0 - 6.0	25 - 40
Intermediate	25 - 45	3.0 - 4.5	35 - 50
Aggressive	10 - 30	2.0 - 3.5	45 - 60
Highly leveraged	Below 15	2.5 or less	Over 50

The indicative ranges for utilities differ somewhat from the guidelines used for their unregulated counterparts because of several factors that distinguish the financial policy and profile of regulated entities. Utilities tend to finance with long-maturity capital and fixed rates. Financial performance is typically more uniform over time, avoiding the volatility of unregulated industrial entities. Also, utilities fare comparatively well in many of the less-quantitative aspects of financial risk. Financial flexibility is generally quite robust, given good access to capital, ample short-term liquidity, and the like. Utilities that exhibit such favorable credit characteristics will often see ratings based on the more accommodative end of the indicative ratio ranges, especially when the company's business risk profile is solidly within its category. Conversely, a utility that follows an atypical financial policy or manages its balance sheet less conservatively, or falls along the lower end of its business risk designation, would have to demonstrate an ability to achieve financial metrics along the more stringent end of the ratio ranges to reach a given rating.

Note that even after we assign a company a business risk and financial risk, the committee does not arrive by rote at a rating based on the matrix. The matrix is a guide--it is not intended to convey precision in the ratings process or reduce the decision to plotting intersections on a graph. Many small positives and negatives that affect credit quality can lead a committee to a different conclusion than what is indicated in the matrix. Most outcomes will fall within one notch on either side of the indicated rating. Larger exceptions for utilities would typically involve the influence of related unregulated entities or extraordinary disruptions in the regulatory environment.

We will use the matrix, the ranking list, and individual company reports to communicate the relative position of a company within its business risk peer group and the other factors that produce the ratings.

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Global Power Criteria Report

Credit Rating Guidelines for Regulated Utility Companies

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Related Research

- Fitch's Approach to Rating Competitive Generators, July 24, 2007.
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■ Overview

These guidelines are an overview of Fitch Ratings' global approach to credit ratings for electric, natural gas and water utilities. This report updates and replaces Fitch's previously published credit rating criteria for regulated electric distribution companies and also covers vertically integrated electric utilities, natural gas distribution companies and water companies. The report also incorporates Fitch's methodology for evaluating corporate liquidity. Since utilities are significantly affected by local and national laws and regulations as well as regional and local consumption patterns and energy economics, Fitch also publishes periodic reports that explain the application of these guidelines to specific markets in many parts of the world.

The rating evaluation of an electric, gas or water utility considers the qualitative and quantitative risks associated with the company's business and corporate structure in combination with the company's financial strength and liquidity. The financial assessment emphasizes cash flow financial measures rather than equity or earnings-based ratios. The analytical focus is on the adequacy of the utility's cash flow relative to fixed charges, debt obligations and capital expenditures as well as its capital structure, liquidity and profitability.

The assessment of operating and business risks is an important element in determining ratings. This analysis is carried out using both quantitative and qualitative methods. Qualitative factors with the most significant effect on companies in the utilities sector include an evaluation of the regulatory and political environment in which the utility operates, including such factors as price-setting and cost-recovery mechanisms, transparency and predictability of the regulatory regime, exposure to competition and the nature of the customer franchise. In addition, Fitch's operational and business evaluation considers the degree to which the utility bears financial exposure to variations in commodity costs and in the case of network businesses, the responsibility for reliable supply. The business risk profile is also influenced by factors such as customer demographics, the type and quality of assets, operating performance, fuel mix, exposure to hydrological risks and management's strategy and capability. Each of these factors will affect the predictability or volatility of a utility's cash flow.

The assessment of operating risk also includes a review of the historical volatility of operating cash flow, when available, compared to the historical trend of similar companies. Fitch analysts review past cash flow trends to assess how the volatility or stability has been affected by the aforementioned fundamental factors. The assessment incorporates analytical judgment about how fundamental factors may affect the company's future operating cash flow.

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Another important step in the rating process is an assessment of the utility's legal and corporate structure. Fitch's analysis focuses on the extent to which the utility's rating is aided by the financial support of a parent, sovereign or subsovereign entity, insulated from other group members through ring-fencing mechanisms or burdened by the weak condition of its parent, subsidiaries or affiliates. This assessment can either raise or lower the rating that would otherwise result from the analysis of an entity's stand-alone financial condition and business risk position.

Because regulated utilities typically enjoy more stable and predictable cash flows than industries that are highly competitive, cyclical or with less predictable demand, utilities in favorable regulatory and legal jurisdictions have the ability to support increased leverage and enjoy higher ratings than industrial companies with similar financial metrics. Regulated utilities in developed nations generally merit issuer default ratings (IDR) in the investment-grade categories, typically ranging from 'AA-' to 'BBB-', but there is no global norm.

■ Regulated Utility Qualitative Risk Factors

While regulated utilities generally have more stable and predictable cash flows than companies in many other industries, it would be a mistake to view all regulated utilities as identically low-risk businesses. A number of credit concerns exist for regulated utilities, including:

Regulatory Risk

Among the largest risks of regulated utilities are unfavorable regulatory policy and unpredictable regulatory outcomes (lack of "transparency" in the regulatory process). If the jurisdiction's rate-setting climate is confiscatory or capricious, a utility cannot uproot its assets and move to a more attractive jurisdiction. A utility may be obliged to meet levels of service quality or specific investment levels that exceed the utility's financial capability or ability to attract capital. In mature markets, if the goal of the regulatory authority is to reduce end-user prices, utility tariffs may be ratcheted downward to the point that no further economies can be wrung out of the expense base and profit margins and financial protection measures are eroded as a result. Disallowing prudently incurred costs would cause similarly unfavorable results.

Commodity Price/Market Risk

Some utilities are exposed to significant commodity price risks, while others have access to hedging mechanisms, such as the ability to pass through to consumers changes in fuel or purchased power costs or in the case of some distribution/retail companies, the actual cost of supplying electricity or natural gas. This is a major variable in comparing the risk of electric and gas utilities. When commodity costs are rising, the frequency of fuel adjustments is particularly important. Utilities insulated from market price exposure will be able to carry more leverage at a particular credit rating level than those exposed to market price risk. However, in a high or rising commodity cost environment, even utilities that are able to recover commodity costs from end-use customers are subject to higher working capital requirements associated with regulatory lag, depressed customer demand and increased bad debt expense, which may not be recoverable in rates. Finally, utilities typically collect revenues in local currency, and emerging market utilities can be exposed to currency devaluation if they have fixed costs or debt in nonlocal currencies.

Operating Risk

For electric utilities, the threat of a prolonged unplanned outage of a key operating facility is a significant credit risk. If an electric generating unit is out of service for an extended period, replacement power costs could be significant, particularly during peak heating or cooling seasons. In the case of large coal- or nuclear-fueled base-load generating units, an outage could drive up regional power prices, exacerbating the higher cost of replacement power. Even for a company with an effective fuel-adjustment mechanism, regulatory lag can strain liquidity and/or regulators may disallow cost recovery if the outage is deemed to have been the result of imprudent behavior on the part of the operator. Base-load generating units that represent a significant concentration of a company's asset base pose the greatest risk. Extensive damage to a transmission or distribution network related to a storm or disaster may also result in temporary stress. The exposure is greatest for the rural or remote parts of a network system, particularly those in mountainous terrain that is difficult to access. Even if regulators permit cost recovery, some regulatory lag is likely. To a lesser extent, system damage is also an issue for natural gas utilities, most notably in storm or flood-prone regions. Depending on the regulatory regime, water utilities may face hydrological risks both in terms of the availability and price of bulk water purchased and volume risk associated with lower demand if water usage restrictions are required in times of drought.

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Competition, Obsolescence and Technology Risk

In many jurisdictions, network utilities are granted an exclusive monopoly franchise to serve all needs of consumers within a geographical footprint. In some cases, consumers may have the option to switch their service to a competitor. Even where a utility holds an exclusive franchise to serve consumers, a substitute energy supply may compete directly (for example, natural gas delivered by pipes in competition with bottled gas, oil, kerosene or electricity). The more essential the service is to consumers and the less subject it is to competition, the more stable and secure the utility's business profile becomes.

Although not an immediate concern, long-term credit ratings of electric utilities should consider the exposure over the long term to technology risk. Potential competitors for electric service include on-site industrial generation, generation of electricity using microturbines or fuel cells, on-site solar or wind production of energy, or installation of more energy-efficient appliances or industrial processes. In most areas, significant bypass of the wired distribution network is not currently commercially feasible, although some new technologies are becoming economically competitive in remote areas and under special circumstances. Customers will have a greater economic motivation to invest in new equipment or alternate energy supplies if the regulated utility tariff is uneconomically high (e.g., a tariff that incorporates high competitive transition charges, cross-subsidies to another class of customers or subsidies for social welfare costs, such as universal service).

Mergers and Acquisitions

There are numerous examples of consolidation mergers that resulted in more efficient companies with stronger operating expertise and financial and capital resources. Conversely, consolidation often creates new credit risks, such as management distraction, difficulty in achieving expected synergies, inflated acquisition prices and increased financial leverage, unfavorable treatment by regulators and the credit risk of a combination with a financially weaker company.

■ Credit Rating Criteria for Utilities

Corporate/Legal Structure

The corporate structure of a utility can have a significant effect on credit ratings. In some cases, the utility may be a subsidiary of a parent holding

company, with other subsidiaries engaged in a variety of businesses. In other cases, the utility is a parent, with subsidiaries or divisions engaged in competitive and nonregulated businesses. Fitch's analysis focuses on the extent to which the utility's rating is aided by the financial support of a parent or burdened by the weak condition of its parent, subsidiaries or affiliates.

Among the important considerations is the extent to which a utility's access to capital may be damaged by the financial difficulties of a parent or affiliate and/or whether the utility is dependent on the parent for equity to support capital expenditures. The analysis also considers whether the corporate parent relies on utility dividends to support other regulated or unregulated subsidiary operations. In cases that Fitch determines there is a significant business with financial or legal interdependence, the rating differential between a utility and its parent or a utility and its subsidiary is likely to be limited. If financing occurs at the parent for all entities, or where significant cross-subsidies between the utility and its affiliates occurs, a consolidated rating is likely.

The legal analysis considers national laws that vary among countries and define the extent to which parents may be held responsible for the debt of subsidiaries or circumstances in which subsidiaries are responsible for the liabilities of a parent or affiliate. Public service entities may be subject to normal credit rights and bankruptcy laws, as is the case in the United States, or exempt from foreclosure or normal creditor remedies. In some jurisdictions, such as the UK, the government may have the right to impose a special administrator, whose principal responsibilities may be more closely aligned to ensuring continuity of supply rather than ensuring maximum recovery for creditors. Fitch considers these legal and structural issues to determine to what degree a utility's rating is affected by the credit quality of its parent or affiliate.

Statutes, regulatory laws or terms of the utility concession may restrict transactions between a utility and its corporate parent (or subsidiaries or affiliates), limit the maximum amount of debt permitted to be owed by the utility and control the amount of dividends and distributions from the utility. Similar restrictions may be contained in bond indentures or bank credit agreements. Rules of this type are said to "ring fence" the utility and support the utility's credit quality. If sufficiently strict, these constraints may insulate the utility from the direct effect of the lower credit rating of its parent or affiliates.

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Regulatory Environment

Regulation is a key factor in determining credit ratings for utilities. In evaluating the regulatory environment, Fitch considers the laws that dictate the terms and conditions of providing utility service as well as commonly employed policies and recent regulatory actions. The review of the regulatory environment is incorporated into the analysis of the business risk and financial condition of the utility. Fitch conducts the regulatory assessment on:

- A national basis, if utilities are regulated on a common basis nationally, with a single methodology that encompasses all utilities, as seen, for example, in the UK, Chile and Argentina.
- A statewide basis, if all utilities in a state are regulated similarly.
- A utility by utility basis, if the regulatory regime is unique to each utility.

Franchise or Concession Terms

Typically, regulated utilities serve customers pursuant to a franchise or concession, which may be exclusive or nonexclusive. In the case of a nonexclusive franchise, it is important to review the conditions under which a competing provider may offer service. For example, in Chile, the regulatory authority may grant permission to a second distribution utility to build facilities and extend service to new customers upon demonstrating that it is in the public interest and would be more efficient for the electric system as a whole. In practice, this usually affects only service expansion to remote communities near the boundaries of two utilities' franchise areas. Of greater credit concern is a situation where dual facilities compete.

A concession or franchise may be limited to a fixed term or exist in perpetuity, absent evidence of poor service quality. If there is a limit to the term of the franchise, it is important to consider that in the debt structure and credit evaluations.

In an increasing number of jurisdictions, retail franchises are being opened up to full or partial competition. The pace of deregulation and the company's competitive position will determine whether the process has a material impact on the cash flows of the business.

Price Setting

Fitch's review of a regulated utility includes consideration of the tariff-setting process established by law or regulatory order and the past record of regulatory actions, such as the following:

- Under cost-of-service regulation, tariffs are set by the regulatory body at a level to allow the utility to recover reasonable expenses and earn a fair return on invested capital.
- A variant on cost-of-service tariffs incorporates incentive mechanisms (sometimes called "performance-based rate-making"), permitting the utility to retain a portion or all of its' cost savings within a fixed band, while the balance of any cost savings is passed on to consumers in lower prices.
- Under price cap regulation, a maximum price is set for each individual utility. Utilities with the ability to keep expenses low or expand sales can enhance their profit and retain any additional revenues until the next price reset. However, if the price cap is set very low to capture all the expected future productivity improvements, some utilities may not even be able to earn a reasonable return on investment. Under the UK model (also common in Australia), the price cap is set for five years with a one-time price adjustment at the beginning of this period. The tariff automatically adjusts annually thereafter by an inflation index plus or minus a given factor ("x" factor). The initial price and the "x" factor are a function of the expected change in cost base of the utility (including assumed efficiencies) and the required return on and of capital over the period.

Whatever mechanisms are used for setting prices, the most important element in assessing regulatory climate within a particular jurisdiction is the extent to which regulators set prices at levels that allow utilities a reasonable opportunity to recover costs in a timely manner and earn a return on capital investment consistent with the level of risk. To the extent that a performance-based ratemaking or price cap program provides the utility an incentive for efficient operation, Fitch views that as a positive factor. Furthermore, credit quality is enhanced if the tariff for each type of customer reflects the true economic costs of providing service and one set of customers is not subsidizing others. When cross-subsidies exist among customer classes, customers with uneconomically high tariffs will have an economic incentive to reduce consumption, self-generate or seek alternate energy sources.

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Among the tariff-setting practices that can affect the adequacy of price levels and are considered important by Fitch are the expected returns on capital relative to the industry average and the level of risk, the ability to pass through fuel and purchased power and other operating costs (see *Commodity Price Exposure* section on page 6), and the timing and adequacy of cash recovery of invested capital.

Tariff design, which can affect a utility's cash flow, is also considered. The tariff may be structured with a greater or smaller proportion variable to the volume of energy consumption or, in rare cases, as a flat fee insensitive to the amount of energy consumed. If a high proportion of the tariff is tied to energy consumption, the utility's cash flow may be highly sensitive to fluctuations in weather (for household and small business customers) and industrial activity (for manufacturers and extractive industries).

In mature markets, the volume of consumption and number of customers connected to the system will be relatively stable over time. However, in developing markets, moderate and consistent growth in per capita consumption and the customer base may lead to material volume growth. In such cases, a higher volume-related component in the tariff mitigates some of the risk of higher than expected demand leading to greater infrastructure investment requirements. Conversely, explosive growth in demand for service may produce soaring capital expenditure requirements that surpass the available cash flow. However, economic crises can shrink the volume of consumption, with a severe effect on a volume-sensitive tariff.

Potential for Regulatory Change

The final step in the regulatory assessment process is an evaluation of the potential for future statutory or regulatory changes. Sometimes public policy provides a safety net, protecting investors in utilities by providing compensation to utilities for investments determined uneconomical by any change in the rules. However, investors have at times been exposed to investment losses when the regulatory model changed without adequate compensation for investors who had invested in good faith based on the earlier framework.

In many developed nations, the outlook of individual utilities could change as a result of continuing adjustments in the industry structure. While there is a high degree of confidence that electric or gas consumers will remain connected to the distribution

system of their local utility for the foreseeable future, competition has been introduced for some traditional distribution utility functions, such as retailing, metering, billing and energy services.

At some point, policy changes or future technology developments may lead to the migration of customers away from the wired distribution of electricity or distribution of natural gas over a public network, which could create a new round of stranded costs relating to utility assets. Whether regulatory price-setting would or could keep utilities economically whole in the face of a long, slow decline in sales due to competition from other fuels or self-generation is open to question.

Service Area Demographics

A regulated utility has a substantial, immovable fixed investment tied to a specific region and dedicated to serving a population of current and potential customers. Therefore, it is important to analyze the potential customer base and penetration of electric and gas service within it as well as population density and trends in the per capita usage of electricity and natural gas by consumers. Additionally, population trends, such as growth rates, migration and new housing starts, are indicators of the vitality of a consumer base. Also important are wealth indices, principally reflected as per capita and disposable income and employment and unemployment rates, since these factors affect consumers' ability to pay for utility service and the willingness of regulators to permit tariff increases. Trends in wealth indexes are predicted by studying such factors as new business formation, job creation and the health of the regional industrial economy.

Consumers of electricity and natural gas may include households, small-commercial businesses, very large office buildings, retail establishments, hospitals, small manufacturers, agriculture and irrigation, or large manufacturers and extractive industries. Each customer category exhibits a different demand profile (seasonality of demand, pattern of consumption during the day or week, sensitivity to business and industrial cycles, and sensitivity to weather). Consumption trends by category of customer over time are a part of the business review. This includes the analysis of the share of total unit volume sales per customer category, the share of sales' revenues relating to each customer category, and the average realized price or gross margin per customer in each category.

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In some cases, a substantial portion of the utility's sales depends on a handful of extremely large customers. For example, in a region whose major industry is primary metal mining, milling and smelting operations, a downturn in commodity prices could result in the closure of a facility, affecting the utility's sale to the industrial operation as well as eliminating jobs and reducing the ability of household consumers and small businesses to afford electric, gas and water service. Therefore, utilities with a more diverse customer base (i.e., without large customer concentration in a single business or industry) tend to have more stable and predictable cash flows over time and typically enjoy higher credit ratings.

In some regions, consumers may have greater opportunities to install self-generation or switch to competing fuels, thus eliminating their consumption of electricity or natural gas distributed over the shared network. In addition, if another utility serves the region or a nearby region, the legal possibility and economic incentives for customers to seek service from the other utility (risk of bypass) must be considered. In the case of utilities with nonexclusive franchises, this analysis becomes even more important.

Energy Supply

In the case of electric and gas distribution systems, Fitch's credit analysis considers the availability of a reliable power or commodity supply.

For gas distributors, the availability of a continuing source of natural gas is a paramount concern. This involves a study of proven and probable reserves of natural gas in the relevant supply areas, exploration and drilling activity, and producers' success in finding new reserves to replace consumption, gas pipeline access and sources of gas imports. Supply can be disrupted when imports are reduced or blocked due to changes in national policies or international disputes, for example. For some electric distribution utilities, the diversity or stability of power supply and the access to and reliability of sufficient power transmission is of great importance.

Equally important is the degree to which the distributor is financially exposed to commodity supply costs. The analysis also considers the exposure to third-party energy suppliers that may default on their supply commitments under adverse circumstances. If a utility undertakes a voluntary competitive supply business, Fitch evaluates how the

supply regime fits into the utility's overall strategic plan and whether the utility sufficiently managed upside opportunities and downside risks. If the utility is mandated to supply all consumption as a default provider or provider of last resort, the analysis focuses on determining whether the utility is reasonably assured of cost recovery and held harmless for actions, such as hedging activities, taken in good faith.

For integrated electric utilities that generate all or a substantial portion of the power needs of consumers, Fitch's credit analysis considers the fuel diversity and adequacy of the company's generating resources. The analytical focus is on the exposure to any particular fuel (see Commodity Price Exposure section), an extended outage of a large generating facility and the need for incremental generating capacity. Large new capacity requirements can drive future funding needs.

Commodity Price Exposure

Exposure to the cost of power or commodity supply may be mitigated by:

- Adjustment mechanisms that allow the utility to adjust its tariff periodically to match the cost of supplying power or natural gas.
- Ownership or control of generation capacity.
- Power or commodity supply contracts with reliable counterparties in volumes matching customers' expected demand (i.e., physical contracts).
- Options, futures or other derivatives (i.e., financial price risk management contracts), if available.

Ironically, even though each of these mitigating strategies reduces overall risk, additional risk may arise. For example, control and operation of power generation expose the utility to operating risk and ongoing capital spending requirements for future environmental compliance, while power and commodity supply contracts entail counterparty and settlement risk, and the utility may be exposed if the actual level of customer demand is lower or higher than the contracted supply.

In each case, Fitch analyzes the utility's supply responsibilities in conjunction with the hedging or risk-mitigation strategy. If a utility has a significant unhedged commodity price exposure or the hedging strategy introduces a meaningful level of risk, Fitch will increase the cash flow coverage ratios required and

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reduce the amount of debt leverage that the utility can support relative to a utility without similar exposure.

Operating Efficiency

Cost and quality of service is a meaningful indicator of business effectiveness and credit quality. If the utility has below-average reliability, it may be subject to financial penalties or a reduced allowed return. Furthermore, major customers may be motivated by power outages or variations in voltage and the quality of network-distributed power to install on-site generation facilities and cease business with the local utility. In some jurisdictions, failure to meet specified service quality standards can result in penalties or, in the extreme, the loss of the franchise or concession, or the regulatory body may grant permission for an adjacent utility to offer service to that utility's customers.

When utilities are subject to price cap or incentive rate-setting, a utility that can increase efficiency and reduce unit costs will be able to earn or exceed the regulatory return. Low-cost operations can also be helpful for utilities subject to cost-of-service regulation by reducing the necessity for rate increases. An efficient operator with lower tariffs will also face less resistance to rate increases and be better able to mitigate technological and bypass risks (customers will have less economic incentive to install new types of equipment or bypass the utility) as well as customer loss (industrial customers will have less incentive to relocate to another region with lower rates).

To measure the efficiency of a power utility's production facilities, Fitch considers the capacity and availability factors of its power generating facilities. Capacity and availability factors that meet or exceed the industry average are indicative of efficient operations. Utility power producers that are unable to achieve the industry norm are likely to incur higher purchased power and operating costs that may not be recoverable from rate payers. Thermal efficiency/heat rate, production costs (fuel plus operating and maintenance expense) per unit of output and revenue per unit of output are also used as measures of operating efficiency.

The quality and efficiency measures used to evaluate a power or gas distribution operation include measures of the frequency and duration of outages and the time to restore service after outages. Losses in transmission and distribution are also an efficiency measure, although these are often influenced by geographical factors or the nature of the network over which the

utility has no control. Factors such as population density, number and diversity of customers served, geographic location and regulatory policies in the jurisdiction may skew efficiency measures and must be considered when assessing the efficiency of distribution operations. For example, a utility serving a dispersed customer base in a rural farming region is likely to have a higher average total cost of distribution service than another utility serving a densely populated metropolitan area. The higher cost of service for the rural low-density utility will reflect the greater number of distribution facilities needed to serve fewer customers per mile and is not necessarily representative of inefficient operations.

Very effective utilities have efficient billing systems and high collection rates. However, for utilities in emerging markets, the ability to bill and collect revenues may be undermined by factors, such as unfavorable regulatory policies and customers' economic stress, as well as by internal factors, including inadequate information systems and weak management controls. For electric utilities, the difference between the amount of energy purchased or produced and the amount billed to consumers is generally studied and broken down into technical losses (relating to physical characteristics) and nontechnical losses (theft of service and inadequate billing controls.)

The condition of the utility's assets is also considered in the operations review. Fitch does not conduct engineering evaluations, but evaluations performed by independent engineering consultants may be a factor in initial rating reviews. Typically, the condition of fixed assets and information systems is revealed by the network's performance on a day-to-day basis and manifested in the operating efficiency, service quality and outage statistics.

Management and Strategy

The primary focus of a utility's management should be providing the appropriate level of customer service and service quality. Management must ensure that profit or cost-cutting motives are balanced with the need to deliver service at a level of quality that comfortably exceeds the requirements of the regulatory body or terms of the utility's franchise or concession. Management must also ensure that customers' service expectations are met. The utility business is characterized by a high reliance on favorable relations with regulatory entities and political authorities, which is the responsibility of senior management. If a utility's managers are not viewed by the regulatory body as credible and

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trustworthy or are considered cavalier about the standards of service, there can be significant adverse consequences and financial effects.

If the utility is involved in the generation business, has energy supply responsibility or is a retailer, Fitch reviews the management information systems and control procedures used to measure and manage exposures to commodity price risk, counterparty risk and embedded options in commercial contracts. Senior managers and directors should have a full understanding of the business risks and receive frequent reports on potential exposures.

If the utility is involved in merger and consolidation activities or diversification into nonregulated business activities and these activities interfere with the primary mission or undermine the utility's financial well-being, the utility's ratings may be affected. Fitch assesses management's goals and business plan to determine whether the plan is well-suited to the utility's skills and resources. Also, the utility's strategic direction is analyzed as to its probable effect on the utility's risk profile and financial credit quality measures.

Financial Resources

After considering the qualitative and operating differences among utility companies, ratings are further distinguished by financial resources and performance. In evaluating the relative financial health of utility companies, Fitch focuses on the adequacy of cash flow to cover projected fixed costs and debt obligations under normal and stress circumstances. In Fitch's view, cash flow-based analysis provides the most accurate assessment of an issuer's ability to fund its business operations and meet debt service. Fitch ascribes greater importance to cash flow measures than to other more traditional earnings and capital structure indicators that play a secondary role in the rating analysis.

In assessing credit quality measures, historical and future trends are more important than a specific ratio at a given point in time. A review of historical financial measures is used to gauge the volatility or stability of the utility's cash flow and debt-service coverage ratios in past stress circumstances (e.g., extreme weather, tariff changes or economic recession). Then, Fitch reviews management's projections and constructs stress scenarios to test whether the entity's financial health would be materially impaired by a variety of adverse events, such as two or three years of unfavorable weather conditions, an adverse ruling in the next rate

review or regulatory reset, lower industrial sales, higher operating costs or other risks specific to the utility's regulatory environment and business.

Capital Structure and Financial Flexibility

Fitch's evaluation of a utility's capital structure considers the type and amount of the utility's equity and debt in the context of the financial flexibility needed to balance the utility's operating cash flows, capital investment requirements, and possible and probable contingencies. Fitch also assesses debt type (secured or unsecured), maturity schedule and exposure to floating rate or foreign currency debt or refinancing risk. The debt maturity schedule should be sufficiently staggered so that the utility will not face the need to refinance substantial amounts of debt at a time when market conditions may be unfavorable or the utility's access to the bank market or capital market is constrained. If a significant amount of debt is denominated in a foreign currency, the utility should have a reasonable means of obtaining the foreign currency to pay interest and principal, and the analysis will incorporate stress cases testing the ability to cover obligations despite unfavorable exchange rates.

Financial Ratio Analysis

The financial analysis focuses on cash flow interest and fixed-charge coverage, leverage, liquidity and profitability. Fitch's financial analysis is cash flow-oriented but also incorporates traditional accrual accounting measures. Ratio calculations typically exclude items that Fitch deems as nonrecurring, such as asset impairments, restructuring charges, and gains and losses on asset sales. Adjustments are also made for securitization and operating lease transactions.

The cash flow analysis relies on funds flow from operations (FFO) and, to a lesser extent, earnings before interest, taxes, depreciation and amortization (EBITDA) as the primary indicators of a company's ability to generate funds from ongoing operations to service debt and fixed charges. Each measure is compared to interest, fixed charges and total debt to assess a company's leverage and interest protection.

FFO (as adjusted by Fitch) is derived from the consolidated statement of cash flow and is considered a more precise measure of the cash available to service debt, but the data needed may not be available in all jurisdictions. EBITDA is derived from figures on the income statement and is a rough but useful approximation of cash flow. Fitch adjusts

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EBITDA and FFO by adding back rental expense or similar payments to form EBITDAR or FFO plus rents.

Fitch relies on several coverage ratios to assess a company's ability to meet its interest and fixed charge obligations: FFO interest coverage, FFO fixed-charge coverage, EBITDA interest coverage, EBITDAR fixed-charge coverage, and for utilities regulated on a UK-style basis post-maintenance interest charge coverage, which is FFO coverage, including a deduction for capital maintenance in the numerator (For additional details on post-maintenance interest coverage, please refer to Fitch's report "Post-Maintenance Interest Coverage Ratios for UK Utilities" dated Feb. 28, 2007.) Fixed charge coverage ratios include rental expense (both interest and principal amortization) in the numerator and denominator (For additional information, please refer to Fitch reports "Operating Leases: Updated Implications for Lessees Credit" dated Dec. 20, 2006 and "Cash Flow Measures in Corporate Analysis" dated Oct. 12, 2005). Interest expense is calculated before any credit (reduction) for capitalized interest and/or allowance for borrowed funds used during construction. EBITDA excludes nonrecurring nonoperating income.

Fitch's primary leverage measures are the ratios of FFO-to-debt (or debt-to-FFO), debt-to-EBITDA, debt-to-EBITDAR and for UK-style regulatory regimes debt-to-regulatory asset value (RAV). In each case, debt is adjusted to reflect debt equivalents and/or off-balance-sheet debt. Traditional balance-sheet measures of gross debt-to-capitalization and net debt-to-equity (gearing ratio) are also considered but given less weighting. These measures rely on the book value of equity, which is subject to variations in applications of accounting standards and may be less meaningful indicators of financial leverage.

Profitability is also an important financial measure. To attract capital and remain financially viable, utilities must operate profitably over the long term. Profitability is measured by return on average common equity, operating margin and return on assets.

Financial flexibility is more qualitative and is based on Fitch's assessment of capital market access, availability of bank facilities and a review of marketable assets. Fitch also assesses debt type (secured or unsecured), maturity schedule and exposure to floating-rate debt or refinancing risk.

Liquidity

Fitch expects a utility company to have sufficient liquidity to meet its normal business activities as well as cover adverse stress events. The liquidity analysis begins with a base case forecast of the company's expected FFO less its working capital needs, capital expenditures and dividends. The residual free cash flow or cash flow deficiency is matched against debt maturities to assess the sufficiency of internal cash sources to meet ongoing operating and financial obligations. The base case also considers the likely cash needs arising from contingent liabilities, such as guarantees and obligations of nonconsolidated affiliates important to the company's core business lines.

Fitch generally assumes that all cash on hand and available borrowing capacity under credit facilities may be used to cover cash deficits, subject to adjustments based on Fitch's evaluation of the company's ability to renew expiring credit facilities or meet conditions precedent to borrowing. Secondary funding sources, including asset sales, equity and debt issuance, and parent capital contributions as well as planned cash uses, such as equity repurchases or additional debt repayment, are also considered.

After evaluating the company's base case liquidity strength, Fitch considers additional stress case conditions that could further strain a utility's cash position, given its individual circumstances. The two broad categories of stress events are operational events and events relating to trading and marketing activities. The selected stress events have a reasonable probability, but not expectation, of occurring and the actual occurrence would result in a significant drain on cash liquidity.

Operational stresses include but are not limited to a prolonged unplanned outage at key operating facilities, severe price movements for an unhedged fuel need and the failure of a fuel or power supplier to make delivery or repair costs from a hurricane or serious storm. Adverse results in a pending investigation or lawsuit are also considered as a potential operational stress.

For companies that trade energy commodities Fitch considers the collateral requirements related to adverse market price movements and changes in credit ratings (for additional details on stress cases, please refer to Fitch's report, "Evaluating Liquidity in the Power and Gas Sector" dated Sept. 1, 2005).

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Available liquidity for the stress analysis is limited to unrestricted cash and funds available under committed bank credit facilities. The expected loss related to the adverse stress scenario should be covered by the availability at least 1.0 times. In determining the adequacy of a utility's cash flow under stress conditions, Fitch recognizes that the company has the flexibility to lower its dividend payments, projected share buybacks and discretionary capital expenditures. Fitch assumes that in a stress scenario a company will draw on its bank lines to fund the liquidity needs, and will add the draw to the company's debt and reduce EBITDA for any anticipated earnings effect of the events.

Risk Assessment and Guideline Credit Ratios

Fitch analysts use benchmark credit ratios and comparisons with peer companies to compare utilities and related companies in the utilities sector. The benchmarks may differ in various jurisdictions and between different types of utilities. The benchmarks presume that companies with progressively higher variability of operating cash flow (higher business risk) have progressively lower debt capacity.

A quantitative approach is limited in some jurisdictions by the lack of sufficient data. For a company with no prior operating history, the experience of peer companies may provide a useful proxy, but in some markets undergoing restructuring, reliable peers may not be available. It should be noted that the same benchmarks cannot be applied directly to utilities in different nations or under different ownership situations. Currency and economic volatility and political risks vary from one nation to another and require adjustments in the standards, as do differences in tax circumstances, transparency of the regulatory regime, ownership structures (e.g., municipal, cooperative or state ownership) or implicit governmental support.

■ Financial Adjustments

Debt Equivalents

Fitch calculates a debt equivalent for certain off-balance-sheet and other debt-like obligations. The debt equivalent is calculated using the present value of the remaining rental obligation or a multiple of lease rental payments (commonly 8 times). For material lease obligations, the present value approach is the preferred

methodology. Power plant tolling agreements are also capitalized using the present value approach. If the lessor is a special-purpose entity (SPE), the entire SPE is consolidated into the lessee. In each instance, an interest component is calculated and added to interest expense for the calculation of adjusted financial ratios. When using the present value approach, the discount rate is multiplied times the implied lease principal. When using a multiple of lease rental payments the entire rental payment is treated as interest expense. For more information, see Fitch's Criteria report, "Operating Leases: Updated Implications for Lessees' Credit," dated Dec. 20, 2006.

Nonrecourse Debt Obligations

Nonrecourse debt obligations are evaluated in terms of strategic relevance of the asset or business unit and the level of financial separation. If deemed noncore by Fitch, the debt can be deconsolidated. When a unit is determined to be of credit and debt is deconsolidated, all income and dividends are also excluded from financial projections.

Corporate Guarantees

Guaranteed debt of nonconsolidated entities is consolidated. With respect to performance guarantees, Fitch's analysts forecast whether there is any expected liability and if so, may consolidate the expected amount.

Hybrid Securities

Fitch gives equity credit to certain hybrid securities that are neither common stock nor ordinary debt. The equity credit consists of five classes: 100%, 75%, 50%, 25% and 0%. The proportion of equity credit is influenced by the convertibility or junior ranking, the interest/dividend deferral mechanism, the effective maturity and the absence of investor protections, such as covenants and cross defaults. In adjusting financial leverage and capital ratios Fitch uses the adjusted equity and debt derived from appropriate equity credit attributed to each hybrid security. Interest coverage is calculated in two alternate ways: with all interest or dividends included in the calculation of interest and fixed charges and with all deferrable dividends or interest eliminated. Fitch expects that 70% or more of the entity's equity capital will be in the form of common equity securities, since hybrid securities are most equity-like when the issuer is in distress but offer less support when the entity's financial condition is merely weakening. For additional information on Fitch's treatment of hybrid securities, please refer to the special report, "Equity

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Credit for Hybrids and Other Capital Securities,"

dated Sept. 27 2006.

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Credit Rating Guidelines for Regulated Utility Companies

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RESEARCH

U.S. Utilities Ratings Analysis Now Portrayed In The S&P Corporate Ratings Matrix

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The electric, gas, and water utility ratings ranking lists published today by Standard & Poor's U.S. Utilities & Infrastructure Ratings practice are categorized under the business risk/financial risk matrix used by the Corporate Ratings group. This is designed to present our rating conclusions in a clear and standardized manner across all corporate sectors. Incorporating utility ratings into a shared framework to communicate the fundamental credit analysis of a company furthers the goals of transparency and comparability in the ratings process. Table 1 shows the matrix.

Table 1

Business Risk/Financial Risk

Business Risk Profile	Financial Risk Profile				
	Minimal	Modest	Intermediate	Aggressive	Highly leveraged
Excellent	AAA	AA	A	BBB	BB
Strong	AA	A	A-	BBB-	BB-
Satisfactory	A	BBB+	BBB	BB+	B+
Weak	BBB	BBB-	BB+	BB-	B
Vulnerable	BB	B+	B+	B	B-

The utilities rating methodology remains unchanged, and the use of the corporate risk matrix has not resulted in any changes to ratings or outlooks. The same five factors that we analyzed to produce a business risk score in the familiar 10-point scale are used in determining whether a utility possesses an "Excellent," "Strong," "Satisfactory," "Weak," or "Vulnerable" business risk profile:

- Regulation,
- Markets,
- Operations,
- Competitiveness, and
- Management.

Regulated utilities and holding companies that are utility-focused virtually always fall in the upper range ("Excellent" or "Strong") of business risk profiles. The defining characteristics of most utilities--a legally defined service territory generally free of significant competition, the provision of an essential or near-essential service, and the presence of regulators that have an abiding interest in supporting a healthy utility financial profile--underpin the business risk profiles of the electric, gas, and water utilities.

As the matrix concisely illustrates, the business risk profile loosely determines the level of financial risk appropriate for any given rating. Financial risk is analyzed both qualitatively and quantitatively, mainly with financial ratios and other metrics that are calculated after various analytical adjustments are performed on financial statements prepared under GAAP.

Financial risk is assessed for utilities using, in part, the indicative ratio ranges in table 2.

Table 2

Financial Risk Indicative Ratios - U.S. Utilities

(Fully adjusted, historically demonstrated, and expected to consistently continue)

	Cash flow		Debt leverage
	(FFO/debt) (%)	(FFO/interest) (x)	(Total debt/capital) (%)
Modest	40 - 60	4.0 - 6.0	25 - 40
Intermediate	25 - 45	3.0 - 4.5	35 - 50
Aggressive	10 - 30	2.0 - 3.5	45 - 60
Highly leveraged	Below 15	2.5 or less	Over 50

The indicative ranges for utilities differ somewhat from the guidelines used for their unregulated counterparts because of several factors that distinguish the financial policy and profile of regulated entities. Utilities tend to finance with long-maturity capital and fixed rates. Financial performance is typically more uniform over time, avoiding the volatility of unregulated industrial entities. Also, utilities fare comparatively well in many of the less-quantitative aspects of financial risk. Financial flexibility is generally quite robust, given good access to capital, ample short-term liquidity, and the like. Utilities that exhibit such favorable credit characteristics will often see ratings based on the more accommodative end of the indicative ratio ranges, especially when the company's business risk profile is solidly within its category. Conversely, a utility that follows an atypical financial policy or manages its balance sheet less conservatively, or falls along the lower end of its business risk designation, would have to demonstrate an ability to achieve financial metrics along the more stringent end of the ratio ranges to reach a given rating.

Note that even after we assign a company a business risk and financial risk, the committee does not arrive by rote at a rating based on the matrix. The matrix is a guide--it is not intended to convey precision in the ratings process or reduce the decision to plotting intersections on a graph. Many small positives and negatives that affect credit quality can lead a committee to a different conclusion than what is indicated in the matrix. Most outcomes will fall within one notch on either side of the indicated rating. Larger exceptions for utilities would typically involve the influence of related unregulated entities or extraordinary disruptions in the regulatory environment.

We will use the matrix, the ranking list, and individual company reports to communicate the relative position of a company within its business risk peer group and the other factors that produce the ratings.

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Moody's Investors Service

Global Credit Research
Credit Opinion
28 JUL 2008

Credit Opinion: Arizona Public Service Company

Arizona Public Service Company

Phoenix, Arizona, United States

Ratings

Category	Moody's Rating
Outlook	Stable
Issuer Rating	Baa2
Sr Unsec Bank Credit Facility	Baa2
Senior Unsecured	Baa2
Subordinate Shelf	(P)Baa3
Commercial Paper	P-2
Parent: Pinnacle West Capital Corporation	
Outlook	Stable
Issuer Rating	Baa3
Sr Unsec Bank Credit Facility	Baa3
Senior Unsecured Shelf	(P)Baa3
Subordinate Shelf	(P)Ba1
Preferred Shelf	(P)Ba2
Commercial Paper	P-3

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Key Indicators

Arizona Public Service Company

ACTUALS	1Q08 LTM	2007	2006	2005
(CFO Pre-W/C + Interest) / Interest Expense [1][2]	4.4x	4.2x	4.4x	3.6x
(CFO Pre-W/C) / Debt [2]	19.6%	18.3%	19.0%	14.5%
(CFO Pre-W/C - Dividends) / Debt [2]	14.1%	14.0%	14.5%	9.7%
(CFO Pre-W/C - Dividends) / Capex [2]	56.0%	58.7%	79.0%	53.1%
Debt / Book Capitalization	45.9%	45.9%	46.0%	47.5%
EBITA Margin	21.7%	22.6%	23.9%	20.9%

[1] CFO pre-W/C, which is also referred to as FFO in the Global Regulated Electric Utilities Rating Methodology, is equal to net cash flow from operations less net changes in working capital items [2] Changes in risk management and trading assets and liabilities are excluded from CFO Pre-W/C

Note: For definitions of Moody's most common ratio terms please see the accompanying User's Guide.

Opinion

Corporate Profile

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Arizona Public Service (APS: Baa2 senior unsecured, stable) is a vertically integrated electric utility that provides electric service to most of the state of Arizona with the major exceptions of about one-half of the Phoenix metropolitan area and the Tucson metropolitan area. APS is the primary subsidiary of Pinnacle West Capital Corporation (Pinnacle: Baa3 senior unsecured, stable), a holding company that through its other subsidiaries sells energy related products and services and develops residential and commercial real estate.

Recent Events

On July 25, 2008 Moody's revised the outlooks for APS and Pinnacle to stable from negative. The revision in outlook was a result of the companies' stable financial performance and also reflects our opinion of APS' improved prospects for more timely recovery of certain costs than had historically been the case. Our view is based on recent regulatory decisions involving recovery mechanisms for the cost of fuel and purchased power and transmission as well as recovery mechanisms for certain growth related costs. The outlook revision also recognized APS' demonstrated intent to attempt to minimize regulatory lag by filing for additional rate relief as soon as practicable.

Regulatory Activity

Approval of Line Extension Fees

In February 2008 the Arizona Corporation Commission (ACC) approved an amendment to APS' line extension schedule which eliminated certain free footage allowances and permitted APS to collect, on a current basis, costs relating to line extensions, which are estimated to be approximately \$3,500 - \$5,000 per new meter set (pre-tax). Moody's views the incremental (after-tax) cash flow resulting from these fees as recurring, and we have adjusted our credit metrics to reflect them as operating cash flows.

General Rate Case Filing

In June 2008, APS filed for a \$278.2 million net rate increase (approximately 8.5% from existing customers) comprised of a \$264.3 million non-fuel related increase and a \$13.9 million net fuel-related increase. APS has proposed to collect up to \$53 million of the increase specifically from new customers. The fuel increase request is net of approximately \$170 million currently being collected in APS rates through its power supply adjustor (PSA) mechanism. APS' June filing is based on a test year ended December 2007. The request has been accepted by ACC Staff. A procedural schedule has been proposed with hearings in April 2009 and a decision expected in the latter part of 2009.

Request for Interim Increase

Also in June 2008, APS filed a request for an interim base rate increase of \$.003987 per kWh to become effective upon the expiration of the \$.003987 per kWh power supply adjustor surcharge currently in APS' rates. APS estimates the current surcharge will remain in effect through July. A procedural schedule has been set for this request, with hearings scheduled for September 2008 with a decision anticipated shortly thereafter.

Palo Verde

In February 2007, Nuclear Regulatory Commission (NRC) placed Palo Verde Unit 3 (PVU3), into the "multiple/repetitive degraded cornerstone" column of the NRC's action matrix, which has resulted in an enhanced inspection regimen and some increased operating costs for APS as it seeks to improve its processes at all three Palo Verde units. In February 2008, the NRC issued its revised confirmatory action letter, and as required, on March 31, 2008, APS submitted its revised improvement plan. The NRC will continue to provide increased oversight at Palo Verde until the facility has demonstrated sustained performance improvement. APS anticipates that this process will continue into 2009.

While operating performance at Palo Verde has improved, capacity factors continue to be impacted by planned outages (including a steam generator replacement in 2007) that have been extended by additional inspections. In 2007, the plant's average capacity factor was 79.0% versus 70.7% in 2006 and 77.4% in 2005. For the first quarter of 2008, the nuclear capacity factor was 93%.

Rating Rationale

The Baa2 rating for the senior unsecured obligations of APS reflects the stability of its regulated cash flows, the economic strength of its service territory, its regulatory environment, cash flow credit metrics that are appropriate

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for the rating, and its position as a subsidiary of Pinnacle. The rating and outlook consider the traditionally challenging regulatory environment in Arizona, but also contemplates recent ACC decisions and regulatory activities that appear intended to reduce regulatory lag and provide more timely recovery of certain costs.

Given APS' current significant capital expenditure program, the company will require continued, timely regulatory support to maintain credit metrics that are appropriate for its rating. The stable outlook assumes APS will be reasonably successful in managing its regulatory relationships with an objective of achieving more timely recovery and an opportunity to earn a fair return. The rating also incorporates an expectation that APS will maintain a balanced approach with regards to financing its capital expenditures with a goal of maintaining or improving its current level of financial strength.

The most important drivers of the rating and outlook are as follows:

Regulatory Environment

Almost all of APS' operations are regulated which is generally viewed as positive for credit quality as regulated cash flows tend to be more stable and predictable than those of unregulated companies. This key factor is tempered somewhat by the historically challenging regulatory environment in Arizona, which Moody's ranks as below average for U.S. regulatory jurisdictions in terms of supportiveness or predictability and stability of regulated cash flows.

APS' operations are regulated by the ACC, an elected commission that has tended to render its decisions after prolonged consideration. Although regulatory lag remains a significant concern, recent decisions with regards to costs for fuel and purchased power and transmission, and certain growth related expenditures should reduce the time to recover some of these items.

General Regulatory Lag

APS' rate case activity is illustrative of an environment where there has tended to be below average assurance of timely recovery of costs and the ability to earn a reasonable return on investment. APS' 2003 rate case was not concluded until April 2005, and the increase received was less than half of the amount requested; the significant delay and relatively modest allowed increase resulted in the need for APS to quickly file another rate case in January 2006.

APS' January 2006 rate case was decided somewhat more quickly with a decision rendered in June 2007 wherein the utility received approximately three quarters of its requested increase; however, the allowed increase was almost entirely related to increased costs for fuel and purchased power. Of the \$120 million requested for non-fuel items, only \$7 million was approved. As a result, APS filed another general rate case as soon as practicable, based on a test year-ending September 2007. APS subsequently agreed with ACC Staff to re-file its rate increase request based on a test year-ending December 2007. Given the amount of time generally required to decide rate cases in Arizona, Moody's estimates that new rates will not be implemented until the latter part of 2009.

Reduced Regulatory Lag for Certain Items

The ACC's June 2007 decision included a significantly improved mechanism for the recovery of fuel and purchased power costs, incorporating a forward estimate of fuel costs in addition to the continued recovery of past deferrals. Fuel and purchased power costs have been among APS' most volatile operating expenses and Moody's views the ACC's recent approach to this problem as supportive of the utility's credit profile. However, we note that APS fuel recovery factor remains subject to an annual cap, potentially delaying recoveries beyond a one-year true-up period, and subject to a 90/10 sharing mechanism wherein 10% of costs are not able to be recovered.

In June 2008, APS requested an interim base rate increase that would take effect upon expiration in July 2008 of a surcharge being collected under the fuel clause adjustment mechanism. The request could potentially allow base rate cost recovery, subject to refund, prior to the completion of the next general rate case. This could result in a measure of rate stability as there could potentially be no immediate incremental increase to customers, and there would likely ultimately be a smaller base rate increase. Since the ACC and interested parties needed more time to consider this request, a decision is now expected late September to mid October. If implemented new rates could be in place November 1 when lower winter rates go into effect, thereby allowing some degree of rate stability. Moody's notes that the ACC has granted interim increases in the recent past. Moody's views mechanisms designed to reduce the time required to recover a utility's costs, such as the requested interim base rate increase a positive for credit quality.

In its June 2007 order, the ACC requested that APS propose mechanisms that could potentially allow growth to

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pay for itself, rather than being paid by the current customer base. In February 2008, the ACC approved an amendment to APS' line extension schedule that should provide an almost immediate recovery of the cost of certain growth related capital investment reducing the amount of external financing needed to support these expenditures. Moody's views this revision as positive for credit, virtually eliminating the normal regulatory lag that would otherwise be associated with seeking recovery of these expenditures.

In its 2005 order, the ACC authorized a transmission tracking adjustment (TCA) mechanism designed to allow retail transmission charges to track those authorized by the FERC. The TCA was initially implemented in March 2008, and timely adjusted following an automatic adjustment in FERC transmission rates in June 2008.

Service Territory Growth Slowing

Growth in APS' service territory has slowed significantly below the 4-5% level experienced in 2005 and 2006. In 2007, customer growth was approximately 3%; for the first quarter of 2008 customer growth slowed to 2% and is not expected to return to historical heights over the near-to-medium term. Although, a growing customer base can provide a source of increased revenue, assuming timely recovery of increased growth related investment and increased costs for fuel and purchased power, it also has resulted in a continuing need for capital investment and regulatory relief. The stable outlook assumes APS will continue to take a balanced approach with regards to the funding of its capital expenditures. Moody's also believes a sustained period of slower growth could potentially temper APS need for capital investment which could reduce its financing requirements.

Financial Metrics

In 2004 and 2005, APS' key financial metrics reflected the fact that it had been unable to recover fully increased costs for fuel, purchased power and capital spending on a timely basis. For example, the ratio of cash from operations prior to changes in current assets and liabilities (CFO pre-WC) / debt (incorporating Moody's standard analytic adjustments) dropped into the mid-teens. Financial metrics improved in 2006 and 2007 with CFO pre - WC / debt moving to the upper-teens as fuel recovery improved. These metrics are now toward the middle-to-upper end of the 13% to 25% range identified in Moody's Rating Methodology for Global Electric Utilities for Baa rated entities on a stand-alone basis within the medium risk category. Cash flow credit metrics are expected to remain in that range over the near-to-medium term reflecting more timely cost recovery of certain items and assuming capital expenditures are financed in a manner that is also supportive of APS current financial strength and flexibility. In general, Moody's would look for APS to have financial metrics that are somewhat stronger than comparably rated utility operating companies that operate in regulatory environments that have historically been more supportive of credit quality.

Subsidiary of Pinnacle West

Pinnacle, APS' parent company, conducts a modest amount of non-regulated activities including power marketing and trading, sales of energy related products and services, and residential and commercial real estate development through subsidiaries including SunCor Development Company (real estate). However, for the past several years almost all of Pinnacle's cash from operations has been generated by APS. Over the near-to-medium term, Pinnacle's non-regulated businesses, are not expected to meaningfully contribute to, or detract from, consolidated cash flows. Although residential real estate sales slowed considerably in 2006, 2007 and continuing into 2008, Pinnacle's joint venture strategy with other developers, combined with its successfully completed asset sales program (implemented 2003-2005) has significantly reduced its exposure to this volatile sector. The parent company also maintains a modest amount of leverage with holding company debt at less than 10% of consolidated debt.

Liquidity Profile

APS' Prime-2 short-term rating for commercial paper reflects the relatively stable and predictable cash flow provided by its regulated electric utility operations.

For the year ended December 2007, APS' cash flow from operations of approximately \$765 million covered approximately 72% of its outlays, including capital expenditures of approximately \$900 million and dividends to Pinnacle of \$170 million. The shortfall was funded via a combination of internal and external sources of cash including \$218 million of short term debt proceeds, approximately \$40 million of equity contributions from Pinnacle and cash on hand.

For the next several years, APS' capital expenditures are expected to be in the range of \$1.0 billion per year, primarily to expand APS' transmission and distribution network to meet growing customer needs, but also to upgrade its existing utility properties and for other environmental purposes. Funding for these increased capital

expenditures is expected to be provided via a combination of internal and external sources of cash, including operating cash flow, equity contributions from Pinnacle and long and short term debt financing.

Over the last several years, APS has paid dividends to Pinnacle of \$170 million per year. Moody's expects APS' dividends are likely to remain near this level in 2008 and over the medium term.

APS' pattern of cash flow is seasonal as the peak of electric demand occurs during the summer months due to high air conditioning load that exists in its service territory. As a result, the bulk of its commercial paper borrowings typically occur in the second and third quarters of each year. As of March 31, 2008, APS had \$90 million of commercial paper and \$100 of short-term debt outstanding under its revolving credit facility.

APS has historically maintained a very modest level of cash on its balance sheet; as of March 31, 2008, APS had reported cash and cash equivalents of approximately \$8 million.

APS' commercial paper program is sized at \$250 million and is currently supported by two committed lines of credit totaling \$900 million, a \$400 million line that expires in December 2010 and a \$500 million line that expires in September 2011. As of March 31, 2008, APS had approximately \$100 million of borrowings under its credit facilities. Overall availability under these credit facilities was \$796 million, of which \$90 million was back-stopping commercial paper outstanding. Both credit agreements have one financial covenant that requires the ratio of debt to total capitalization not to exceed 65%. As of March 31, 2008, APS' debt to total capitalization ratio, calculated in accordance with the credit documents, was approximately 47%. The credit agreements do not require a Material Adverse Change (MAC) representation for revolver borrowings. No rating triggers exist in any APS credit facilities though interest costs may increase under various financing agreements if a downgrade occurs. APS nearest long term debt maturity is \$400 million of unsecured notes due in 2011. In 2010, APS must replace letters of credit supporting approximately \$200 million of variable rate pollution control bonds.

APS' Prime-2 rating for its short term obligations assumes that the company will manage the amount of commercial paper and other near term obligations outstanding within the limits of its readily available sources of cash, including its committed bank credit facilities.

Rating Outlook

The stable outlook reflects the nature of APS' predominately regulated cash flows and Moody's view that its improved cash flow financial metrics are likely to be sustainable. The outlook assumes APS' will be reasonably successful in managing its regulatory relationships and that capital expenditures will be financed in a balanced manner with a goal of maintaining or improving APS current position of financial strength.

What Could Change the Rating - Up

APS' rating is not likely to be revised upward in the near-to-medium term. Longer term, if there is an increase in supportive regulatory treatment resulting in material, timely rate increases, or if there are material reductions in costs or leverage such that Moody's could anticipate key financial ratios improving significantly from their current levels, if for example, a ratio of CFO pre -WC / debt could be maintained in the mid twenty percent range.

What Could Change the Rating - Down

A downgrade could result if Palo Verde experiences an extended outage and APS is unable to recover, in a timely manner, higher maintenance and purchased power costs, or if APS' regulatory lag for capital spending becomes more pronounced. A downgrade could result if Moody's expects a sustained weakening of financial metrics, if for example, the ratio of CFO pre -WC / debt would remain in the mid-teens for an extended period.

Rating Factors

Arizona Public Service Company

62000

Select Key Ratios for Global Regulated Electric
Utilities

Rating	Aa	Aa	A	A	Baa	Baa	Ba	Ba
Level of Business Risk	Medium	Low	Medium	Low	Medium	Low	Medium	Low

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CFO pre-W/C to Interest (x) [1]	>6	>5	3.5-6.0	3.0-5.7	2.7-5.0	2-4.0	<2.5	<2
CFO pre-W/C to Debt (%) [1]	>30	>22	22-30	12-22	13-25	5-13	<13	<5
CFO pre-W/C - Dividends to Debt (%) [1]	>25	>20	13-25	9-20	8-20	3-10	<10	<3
Total Debt to Book Capitalization (%)	<40	<50	40-60	50-70	50-70	60-75	>60	>70

[1] CFO pre-W/C, which is also referred to as FFO in the Global Regulated Electric Utilities Rating Methodology, is equal to net cash flow from operations less net changes in working capital items

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AUGUST 2008

AUS UTILITY REPORTS
THE INVESTOR'S EDGE

AUS MONTHLY UTILITY REPORT

ELECTRIC COMPANIES

NATURAL GAS COMPANIES

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WATER COMPANIES

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ELECTRIC

COMPANY	TOTAL REV \$ MILL (1)	REG ELEC REV	NET PLANT \$ MILL	NET PLANT PER \$ REV (1)
Allegheny Energy, Inc. (NYSE-AYE)	13,220	81	7,888	2.22
American Electric Power Co. (NYSE-AEP)	13,220	89	10,710	2.22
Central Vermont Public Serv. Corp. (NYSE-CV)	1,233	100	1,225	0.97
Cleco Corporation (NYSE-CNL)	1,022	96	1,035	1.76
DPL Inc. (NYSE-DPL)	1,332	100	2,720	1.80
Edison International (NYSE-EIX)	13,220	80	17,698	1.33
El Paso Electric Company (ASE-BE)	1,022	98	1,032	1.60
FirstEnergy Corporation (NYSE-FE)	13,220	88	15,903	1.21
FPL Group, Inc. (NYSE-FPL)	1,022	75	1,030	1.89
Great Plains Energy Incorporated (NYSE-GXP)	1,022	39	1,596	1.05
Hawaiian Electric Industries, Inc. (NYSE-HE)	1,022	81	2,460	0.91
IDACORP, Inc. (NYSE-IDA)	1,022	100	1,030	2.99
Maine & Maritimes Corporation (ASE-MAM)	1,022	100	1,030	1.65
OGE Energy Corp. (NYSE-OGE)	13,220	48	1,030	1.11
Otter Tail Corporation (NDQ-OTTR)	1,022	27	1,030	0.71
Pinnacle West Capital Corp. (NYSE-PNW)	1,022	84	1,030	2.37
Portland General Electric (NYSE-POR)	1,022	99	1,030	1.77
Progress Energy Inc. (NYSE-PGN)	13,220	100	16,980	1.91
Southern Company (NYSE-SO)	13,220	99	1,003	2.18
UIL Holdings Corporation (NYSE-UIL)	1,022	100	1,030	0.98
Westar Energy, Inc. (NYSE-WR)	1,022	69	1,030	2.80
AVERAGE				

COMPANIES

S&P BOND RATING	MOODY'S BOND RATING	COMMON EQUITY RATIO (3)	% RETURN ON BOOK VALUE COMMON EQUITY (4)	TOTAL CAPITAL	REGULATION ALLOWED ROE	ORDER DATE
BBB	Baa2	30	18.3	10.46	10.46	
BBB	Baa1	39	14.9	10.81	10.81	
BBB	NR	31	7.4	10.71	10.71	01/08
BBB	Baa1	31	16.8	11.25	11.25	01/08
A	A2	30	NM	11.00	11.00	01/08
A	A2	30	12.7	11.60	11.60	05/06
BBB	Baa2	30	11.8	11.25	11.25	
BBB	Baa2	30	15.0	9.75	9.75	
BBB	Aa3	30	13.8	11.75	11.75	
BBB	A3	30	11.4	10.45	10.45	
BBB	Baa2	30	9.3	10.82	10.82	
BBB	A3	30	6.7	-	-	
NR	NR	30	4.7	10.20	10.20	01/08
BBB	Baa1	30	14.7	10.38	10.38	
BBB	A3	30	10.0	12.00	12.00	
BBB	Baa2	30	8.0	10.75	10.75	06/02
A	Baa1	30	4.9	10.80	10.80	01/08
A	A2	30	7.8	12.42	12.42	
A	A2	30	14.2	11.93	11.93	
NR	Baa2	30	10.1	9.75	9.75	01/08
BBB	Baa2	30	11.3	10.00	10.00	01/08
BBB	Baa2	30	11.2	10.90	10.90	

COMBINATION ELECTRIC

COMPANY	TOTAL REV \$ MILL (1)	% REG ELEC REV (2)	NET PLANT \$ MILL (3)	NET PLANT PER \$ REV (4)
AES Corporation (NYSE-AES)	2,571.0	49	20,920.0	1.44
ALLETE, Inc. (NYSE-ALE)	1,019.0	87	12,380.0	1.36
Alliant Energy Corporation (NYSE-LNT)	2,239.0	69	22,390.0	1.26
Ameren Corporation (NYSE-AEE)	2,000.0	83	12,230.0	2.01
Avista Corporation (NYSE-AVA)	2,212.0	51	24,710.0	1.63
Black Hills Corporation (NYSE-BKH)	1,553.0	30	15,530.0	2.72
CenterPoint Energy (NYSE-CNP)	2,200.0	17	28,000.0	0.99
CH Energy Group, Inc. (NYSE-CHG)	1,267.0	48	18,970.0	0.71
CMS Energy Corporation (NYSE-CMS)	2,360.0	54	23,600.0	1.36
Consolidated Edison, Inc. (NYSE-ED)	2,180.0	62	21,800.0	1.47
Constellation Energy Group, Inc. (NYSE-CEG)	2,083.0	13	10,410.0	0.48
Dominion Resources, Inc. (NYSE-D)	2,024.0	40	20,240.0	1.41
DTE Energy Company (NYSE-DTE)	2,200.0	59	11,490.0	1.38
Duke Energy Corporation (NYSE-DUK)	2,700.0	71	27,000.0	2.44
Empire District Electric Co. (NYSE-EDE)	2,000.0	87	20,000.0	2.44
Energy East Corporation (NYSE-EAS)	2,100.0	56	10,500.0	1.17
Entergy Corporation (NYSE-ETR)	2,100.0	76	21,000.0	1.80
Exelon Corporation (NYSE-EXC)	2,040.0	56	20,400.0	1.33
Florida Public Utilities Company (ASE-FPU)	1,100.0	42	11,000.0	0.98
Integrus Energy Group (NYSE-TEG)	2,175.0	11	11,750.0	0.39
MDU Resources Group, Inc. (NYSE-MDU)	1,500.0	4	1,500.0	0.86
MGE Energy, Inc. (NDQ-MGEE)	1,500.0	61	1,500.0	1.25
NiSource Inc. (NYSE-NI)	1,500.0	16	1,500.0	1.16
Northeast Utilities (NYSE-NU)	1,500.0	84	1,500.0	1.32
Northwestern Corporation (NYSE-NWE)	2,200.0	62	22,000.0	1.46
NSTAR (NYSE-NST)	2,000.0	78	20,000.0	1.32
Pepco Holdings, Inc. (NYSE-POM)	1,500.0	56	1,500.0	0.81
PG&E Corporation (NYSE-PCG)	2,000.0	72	20,000.0	1.78
PNM Resources, Inc. (NYSE-PNM)	1,500.0	100	1,500.0	1.83
PPL Corporation (NYSE-PPL)	2,500.0	62	25,000.0	1.94
Public Service Enterprise Group (NYSE-PEG)	2,000.0	66	20,000.0	1.03
Puget Energy, Inc. (NYSE-PSD)	1,500.0	64	1,500.0	1.74
SCANA Corporation (NYSE-SCG)	2,000.0	42	20,000.0	1.60
SEMPRA Energy (NYSE-SRE)	2,000.0	29	20,000.0	1.31
Sierra Pacific Resources (NYSE-SRP)	2,000.0	94	20,000.0	1.96
TECO Energy, Inc. (NYSE-TE)	2,000.0	62	20,000.0	1.41
UniSource Energy Corporation (NYSE-UNS)	2,000.0	85	20,000.0	1.75
Unitil Corporation (ASE-UTL)	1,500.0	85	1,500.0	0.97
Vectren Corporation (NYSE-VVC)	2,000.0	22	20,000.0	1.09
Wisconsin Energy Corporation (NYSE-WEC)	2,000.0	62	20,000.0	1.81
Xcel Energy Inc. (NYSE-XEL)	2,000.0	78	20,000.0	1.65
AVERAGE				

COMBINED ELECTRIC/COMBINATION ELECTRIC & GAS AVERAGES

& GAS COMPANIES

S&P BOND RATING	MOODY'S BOND RATING	COMMON EQUITY RATIO (3)	% RETURN ON BOOK VALUE COMMON EQUITY (4)	TOTAL CAPITAL	REGULATION ALLOWED ROE	ORDER DATE
BBB-	Baa1	0.7	0.7		11.60	
	NR	13.2	13.2		11.02	
	A2	16.2	16.2		10.29	
BBB-	Baa2	9.5	9.5		10.35	
BBB-	Baa2	5.3	5.3			
BBB-	Baa1	8.8	8.8		10.75	
BBB-	Baa2	22.2	22.2		10.17	
	A2	7.7	7.7		9.60	
BBB-	Baa1	0.0	0.0		10.93	
	A1	11.0	11.0		9.73	
BBB-	Baa2	13.4	13.4		11.00	
	Baa1	NM	NM		10.50	
	A3	17.6	17.6		11.00	
	A3	7.7	7.7		10.85	
BBB-	Baa1	7.0	7.0		10.90	
	A3	7.7	7.7		10.69	
	Baa2	15.8	15.8		10.83	
	A3	NM	NM		10.05	
	Aaa	6.9	6.9		11.28	
	A1	8.3	8.3		11.03	
	A2	15.6	15.6		11.31	
	Aa2	11.4	11.4		10.80	
BBB-	Baa2	5.7	5.7		11.33	
BBB-	Baa1	7.9	7.9		9.72	
BBB-	Baa3	7.2	7.2		11.11	
	A1	7.4	7.4		12.50	
BBB-	Baa1	9.5	9.5		10.15	
BBB-	A3	11.7	11.7		11.35	
BBB-	Baa3	NM	NM		10.28	
	A3	19.4	19.4		9.57	
	A3	20.3	20.3		9.88	
BBB-	Baa2	7.7	7.7		10.40	
	A2	11.5	11.5		10.93	
	A1	14.1	14.1		10.70	
BBB-	Baa3	7.0	7.0		10.48	
BBB-	Baa2	19.9	19.9		11.25	
BBB-	Baa2	7.6	7.6		10.34	
NR	NR	9.5	9.5		9.93	
	A3	11.0	11.0		10.43	
	Aa3	11.7	11.7		10.75	
	A3	9.9	9.9		10.83	
		10.7	10.7		10.66	
		10.8	10.8		10.74	



Moody's Investors Service

Global Credit Research
Rating Action
25 JUL 2008

Rating Action: Arizona Public Service Company

Moody's revises outlook of Pinnacle West and Arizona Public Service to stable

Approximately \$3 billion of debt securities affected

New York, July 25, 2008 – Moody's Investors Service changed the rating outlooks of Pinnacle West Capital Corporation (Pinnacle, Baa3 senior unsecured) and its subsidiaries, Arizona Public Service Company (APS, Baa2 senior unsecured) and PVNGS II Funding Corp. Inc. (PVNGS II: Baa2, senior secured lease obligation bonds) to stable from negative.

The stable outlook considers the companies' improving regulatory environment and operating performance with financial results that are expected to remain consistently within the range expected for integrated utilities rated Baa. APS has begun to receive more supportive regulatory decisions, including "new connection" fees allowing faster recovery for new hookups plus a transmission cost adjustor and power supply adjustor which has limited APS' exposure to fuel and purchased power fluctuations. In addition, performance at the Palo Verde nuclear power plant has improved and APS is making progress in identifying and improving the safety and communication issues at the plant.

As a result of some improved timing on cost recoveries, Moody's now expects APS and Pinnacle's cash flow credit metrics to remain at levels comparable to those achieved in 2006 and 2007. This would place the utility and parent in the mid-to-upper range of ratios for electric utilities with medium business risk according to Moody's rating methodology for global regulated electric utilities. For the twelve months ended March 31, 2008, APS' cash from operations pre-working capital (CFO pre-WC) interest coverage was 4.4x and CFO pre-WC to debt was 19.6% which was comparable to year-end 2006 and slightly above the 18.3% and 4.2x metrics registered in 2007. Pinnacle's CFO pre-WC interest coverage of 4.0x and CFO pre-WC to Debt of 17.5% for the twelve months ended March 31, 2008 were modestly below 2006 levels but comparable to 2007 levels where they still remain within the middle of the range for Baa rated electric utilities. We expect these metrics to remain roughly within this range going forward.

The stable outlook also is predicated on an expectation for continued improvement at Palo Verde such that current heightened regulatory scrutiny is reduced to normal levels over the medium term and that more balanced regulatory relief continues especially given that APS has several rate filings currently pending. We also expect Pinnacle to continue to finance APS' capital expenditures in a manner consistent with its investment-grade rating.

Pinnacle West Capital Corporation, headquartered in Phoenix, Arizona, provides electric service to a substantial portion of the state of Arizona, sells energy-related products and services, and develops residential, commercial and industrial real estate. Pinnacle conducts its business through its subsidiaries. Wholly-owned Arizona Public Service Company is its principal subsidiary.

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Moody's revises outlook of Pinnacle West and Arizona Public Service to stable

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June 25, 2008

Arizona Public Service Co.

Primary Credit Analyst:

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Arizona Public Service Co.

Major Rating Factors

Strengths:

- A favorable power supply adjuster (PSA) that while capped at 4 mills per kilowatt-hour (kWh) is benched to projected power prices, which should minimize fuel and purchased power deferral balances going forward;
- Declining legacy deferral balances, reflecting the recovery through surcharges of past fuel and purchased power costs from retail ratepayers;
- An attractive service territory, which while currently weakened by a real estate cycle that is depressing new customer connections, nevertheless is expected to experience above-average growth over the long run;
- A balance power supply portfolio that is a mixture of coal, nuclear, and gas generation and purchases; due to a self-build moratorium in place until 2015, Arizona Public Service (APS) is expected to increasingly rely on gas-fired purchases, which underlines the importance of a strong PSA;
- Stabilized operations at Palo Verde, although the nuclear units remain under heightened Nuclear Regulatory Commission (NRC) scrutiny; APS operates the plant and owns a 29.1% share of the plant; and
- A manageable maturity schedule for both the parent and the utility until 2011 when about \$578 million is due on a consolidated basis.

Corporate Credit Rating

BBB-/Stable/A-3

Weaknesses:

- The consolidated financial profile of the company is unlikely to meaningfully improve for the foreseeable future due to APS' heavy capital investment, coupled with a lagged regulatory process in Arizona;
- Continued tension in the relationship between APS and the Arizona Corporation Commission (ACC), which is particularly unfavorable for credit quality due to the company's ongoing need for rate relief;
- APS' re-filing of its 2008 general rate case based on a revised test year is expected to delay rate relief past the summer of 2009, which will, all else equal, weaken cash flow measures;
- Consolidated free operating cash flows are expected to be negative through at least 2010, based on the company's capital spending program; and
- SunCor's near-term prospects to make distributions to its parent are limited, due a depressed real estate cycle, which has hit the southwest especially hard.

Rationale

Standard & Poor's Ratings Services today affirmed the 'BBB-' corporate credit rating assigned to Pinnacle West Capital Corporation (PWCC) and its utility, Arizona Public Service. The outlook is stable. The consolidated credit ratings of PWCC primarily reflect the operations of its largest subsidiary, APS, a regulated, electric utility serving about 1.1 million customers within its service territory, which spans roughly two-thirds of Arizona and includes about half of the Phoenix MSA. We view the business profile of PWCC and APS to be 'strong'. While the company continues to benefit from a number of favorable attributes including a good service territory, a reasonably balanced

Arizona Public Service Co.

power supply portfolio and a good PSA. However, APS' continues to face significant regulatory challenges.

APS provided the company with about 92% of its consolidated net income in 2007. SunCor, PWCC's real estate development company, provided about 4%, but due to the significant real estate slowdown in the southwest, it is unlikely it will be a meaningful contributor of cash flows or income over the next several years. (Prior to the real estate downturn, our forecasts have conservatively limited earnings from this subsidiary due to the cyclic nature of its cash flows.) Other subsidiary operations include Pinnacle West Trading and Marketing, which contributed about 4% of consolidated net income in 2007. This subsidiary has since last year been minimizing trading operations. Its largest contract was serving all-requirements load for UNS Electric Inc., which ended in May 2008.

We view the financial profile of PWCC and APS to be 'aggressive', which reflects: year-end debt to total capitalization of 57% (adjusted for items such as power purchases and operating leases); heavy capital spending that is expected to drive negative free operating cash flow for the foreseeable future; cash flow weakness as a function of protracted rate cases; and, while modest, the presence of unregulated activities, which can be unpredictable in their earnings contributions.

Because the preponderance of cash flows for consolidated operations stems from APS, we expect financial performance will continue to be heavily dependent on regulatory outcomes. The conclusion of APS' last general rate case in June 2007 (filed in November 2005 and revised in early 2006) provided the company with mechanisms to recover legacy deferrals and speed the recovery of fuel costs going forward. This rate relief, in place for the last half of 2007, assisted the company in maintaining credit metrics roughly in line with past performance. Funds from operations (FFO) to total debt was about 16% at year-end, with FFO interest coverage around 4x. On a trailing 12-month basis the company's performance has been slightly above these levels, due in part to the federal tax stimulus package approved by the U.S. Congress earlier this year, which is expected to increase deferred taxes (which are added back to FFO and thus increase this total).

We expect APS to be in more or less continuous rate case mode for the next few years. Given APS' capital spending program, forecasted to be about \$1.1 billion annually through 2010, the utility will need to file regular general rate cases to manage recovery of its investment. The use of a historical test year in Arizona, coupled with the fact that fully litigated rate cases take between 18 to 24 months to complete, is expected to result in no meaningful improvement in financial performance through 2009 and possibly beyond, depending on the timing and the outcome of the company's current case.

APS filed its current rate case in March 2008. ACC staff requested that the company revise its filing to reflect a test year ending Dec. 31, 2007 (as opposed to the originally filed version based on a Sept. 30, 2007, test year). The revised case has not been officially certified by the ACC, but certification is expected by July 2. Unlike the company's last rate case, in which \$315 million of the \$322 million of rate relief granted was for fuel and power-related costs, the majority of the current case is for nonfuel expenditures.

While the revised case increased the company's request to \$278 million (about an 8.5% increase, excluding the company's request that customers be assessed about \$53 million in impact fees), the re-filing means that is unlikely the ACC will reach an outcome in the case before October 2009, and because the majority of APS' sales occur in the summer months, the company's financial performance could weaken in 2009.

This month, the company requested that the ACC allow it to continue to collect a \$0.004/kWh charge that it has been collecting in 2007 to recover legacy purchased power and fuel deferrals. Given that the portion of deferred

Arizona Public Service Co.

costs associated with this surcharge is due to be paid by July or August, APS has asked that the ACC continue the charge, but authorize collection as an interim base rate increase, subject to refund as part of the resolution of its rate case, expected in fall 2009. (Last year, the ACC approved similar relief for Tucson Electric Power in its pending rate case settlement when it granted the southern Arizona utility the opportunity to continue to collect charges related to a competitive transition charge, or CTC, while its rate case is pending.) While retail customers would essentially see no rate increase because APS is asking to continue the surcharge as an interim increase, it is unclear what action the ACC will take. A vote could occur as early as late summer.

In 2008, we expect a procedural schedule to be established for the APS rate case, and greater clarity around the timing of an outcome will be available once this is issued. Of note is that three of the five commissioners are facing term limits and will no longer be on the ACC beginning in 2009. Commissioners are popularly elected and about a dozen candidates have announced they will run for the November election. As a result, a majority of the commissioners presiding now will not be on the commission when an APS rate case ruling is rendered. What this means for credit quality is unclear.

APS was successful earlier this year in receiving approval for a change in its line extension policies, which eliminates the free footage allowance that used to be available for customers. As a result, the portion of the company's capital expenditures associated with new line extensions will be offset with contributions in aid of construction (CIAC). This is favorable and year to date ended March 31, 2008, had added about \$10 million in incremental cash flows to the company. Because it is booked under investing activities, cash flow metrics are not improved, but we recognize the significant benefit of APS receiving upfront cash from customers to meet a portion of its distribution capital investment plans. Future cash flows from customers in the form of CIAC will depend on the number of new meter sets, which are significantly off year to date due to the poor real estate market in Arizona and a slowing economy generally.

APS has a well-diversified power supply portfolio that in 2007 consisted of about 22% nuclear generation, 37% coal generation, approximately 18% owned gas generation, and the balance, about 23%, of purchases. We would expect the company's purchased power obligations to steadily climb due to the fact that APS is under a self build moratorium until 2015. APS will also need to meet relatively stringent renewable portfolio standards (RPS). It has in place a surcharge to pass through to customers the costs of RPS compliance.

Palo Verde performance has stabilized, and it has a plan in place to address NRC concerns. As of the first quarter of 2008, the combined capacity factors for all three Palo Verde units was 93%, as compared with 79% for 2007 (which reflects in part an extended planned outage to replace steam generators at unit 3) and 71% in 2006, which largely reflects unplanned outages at unit 1 related to excessive vibration that occurred when that unit exited its extended outage for refueling and replacement of steam generators. Palo Verde Unit 3 remains in the NRC's "multiple/repetitive degraded cornerstone" column of the NRC's Action matrix, which subjects all three Palo Verde units to enhanced NRC inspection regime. Preliminary work in support of this took place throughout the summer of 2007. In February, the NRC issued its inspection report, which determined the plant was operating safely but which also outlined an improvement plan for APS. In late March, APS in turn submitted to the NRC a final improvement plan addressing issues raised in the NRC inspection report. While the nuclear units appear to be on a path to improve operational performance and restore NRC confidence in the operational and safety standards at the plant, this will remain an area of concern until the NRC removes its degraded designation.

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Short-term credit factors

APS and PWCC's short-term rating is 'A-3'. Liquidity is adequate. Pinnacle West has \$18 million of cash and cash equivalents, and total credit facilities of nearly \$1.4 billion, with approximately \$943 million available as of March 31, 2008. In October 2007, APS received approval from ACC to increase its authorized short-term debt borrowing capacity by \$500 million, and long-term debt borrowing capacity by \$1 billion. This will help address the needs of its growing customer base, and the increasing requirement for natural gas and purchased power.

Pinnacle West had close to \$185 million available under its \$300 million unsecured revolving credit facility that expires in December 2010. APS had \$682 million available under its two unsecured revolving credit facilities, \$400 million of which expires in December 2010, and \$500 million in September 2011. SunCor has two credit facilities expiring in October and December 2008 that total \$170 million and approximately \$76 million, respectively, available as of September 2007.

Discretionary cash flow is expected to be negative for 2008 due to APS' capital expenditure plans. Excluding the remarketing of APS' pollution control debt, neither PWCC nor APS has any significant debt obligations maturing until 2011.

Outlook

The stable outlook reflects our expectation that consolidated cash flow volatility has been tamped down by the ACC's approval of a stronger PSA that speeds the recovery of fuel costs, but consolidated financial performance will continue to be challenged by regulatory lag at APS, which could be moderated by APS' pending interim rate request. The stable outlook is premised on no meaningful adverse changes in the company's business risks and continued financial performance that is not significantly weaker than 2007 results. Equity issuances will be expected to balance the capital structure of the company as APS continues to invest heavily in infrastructure. Ratings could be lowered to speculative grade if the company is not able to overcome the challenge of ensuring timely recovery of its prudently incurred costs through rate increases approved by the ACC. Given these challenges, and that presented by NRC scrutiny of Palo Verde, we see little potential for positive movement in the ratings or outlook.

Rating Methodology

The ratings on PWCC and its subsidiaries are determined based on Standard & Poor's consolidated ratings methodology. The application of this approach reflects significant financial and operational inter-relationships among the rated entities and captures the relative contribution to business risk and cash flow of the operating segments. In the absence of meaningful regulatory measures that can restrict the flow of funds within the company, Standard & Poor's considers PWCC's consolidated financial profile, while still analyzing the financial profiles of the standalone entities, to be the best indicator of credit quality of the parent and its subsidiaries, including APS.

Accounting

PWCC reports its financial statements in accordance with U.S. GAAP. These statements received an unqualified opinion by PWCC's independent auditor, Deloitte and Touche LLC, in the most recent annual audited period.

The company benefits from the use of regulatory accounting SFAS 71 (accounting for the effects of certain types of

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regulation), under which some incurred costs or benefits that will probably be recovered or refunded in customer rates are deferred and recorded as regulatory assets or liabilities. As of Dec. 31, 2007, PWCC's consolidated balance sheet contained total regulatory assets and total regulatory liabilities of \$625 million and \$643 million respectively, reflecting assets expected to be recovered and liabilities expected to be settled in future rates.

We make several adjustments to PWCC's financial statements. In 1986, APS sold about 42% of Palo Verde Unit 2 as part of a sale-leaseback transaction. We treat these obligations as operating leases and in 2007 imputed an off-balance-sheet obligation of \$432.18 million. We also impute \$293 million for power purchase obligations in 2007, a number we expect to increase given APS' increasing power purchases. Reported ratios also reflect adjustments to impute debt for unfunded pension and postretirement benefit obligations of \$329.72 million as of the end of 2007.

Table 1

Pinnacle West Capital Corp. -- Peer Comparison*					
Industry Sector: Electric					
	Pinnacle West Capital Corp.	Puget Energy Inc.	Avista Corp.	Unisource Energy Corp.	PNM Resources Inc.
Rating as of June 24, 2008	BBB-/Stable/A-3	BBB-/Watch Neg/--	BBB-/Stable/A-3	-/-	BB-/Stable/B-2
--Average of past three fiscal years--					
(Mil. \$)					
Revenues	3,304.4	2,899.7	1,427.9	1,309.3	2,154.2
Net income from cont. oper.	264.1	166.1	52.3	57.9	82.8
Funds from operations (FFO)	683.7	442.5	186.2	283.6	281.5
Capital expenditures	778.6	726.5	194.5	225.1	339.1
Cash and short-term investments	99.2	30.1	20.6	113.1	70.4
Debt	4,419.9	3,343.9	1,368.8	1,838.8	2,684.7
Preferred stock	0.0	89.5	0.0	0.0	9.6
Equity	3,366.1	2,298.5	854.7	640.2	1,564.5
Debt and equity	7,786.0	5,642.4	2,223.5	2,479.0	4,249.3
Adjusted ratios					
EBIT interest coverage (x)	2.8	2.0	1.8	1.7	1.7
FFO int. cov. (x)	3.6	2.9	2.7	2.8	2.7
FFO/debt (%)	15.5	13.2	13.6	15.4	10.5
Discretionary cash flow/debt (%)	(8.2)	(13.4)	(1.7)	2.1	(5.7)
Net cash flow / capex (%)	62.2	46.9	81.0	113.0	65.2
Total debt/debt plus equity (%)	56.8	59.3	61.6	74.2	63.2
Return on common equity (%)	6.8	7.2	5.7	8.3	5.4
Common dividend payout ratio (un-adj.) (%)	75.5	60.4	54.7	50.4	72.9

*Fully adjusted (including postretirement obligations).

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Table 2

Pinnacle West Capital Corp. -- Financial Summary*					
Industry Sector: Electric					
	--Fiscal year ended Dec. 31--				
	2007	2006	2005	2004	2003
Rating history	BBB-/Stable/A-3	BBB-/Stable/A-3	BBB-/Stable/A-3	BBB/Negative/A-2	BBB/Stable/A-2
(Mil. \$)					
Revenues	3,523.6	3,401.7	2,988.0	2,899.7	2,759.5
Net income from continuing operations	298.8	317.1	176.3	243.2	240.6
Funds from operations (FFO)	735.3	736.3	579.6	567.6	932.3
Capital expenditures	933.9	743.2	658.7	591.7	713.3
Cash and short-term investments	56.3	87.2	154.0	163.4	131.1
Debt	4,686.5	4,358.6	4,214.6	4,272.8	4,120.9
Preferred stock	0.0	0.0	0.0	0.0	0.0
Equity	3,531.6	3,446.1	3,120.5	2,653.7	2,510.0
Debt and equity	8,218.1	7,804.7	7,335.1	6,926.5	6,630.8
Adjusted ratios					
EBIT interest coverage (x)	2.7	3.0	2.6	2.6	2.2
FFO int. cov. (x)	3.7	3.8	3.3	3.2	4.2
FFO/debt (%)	15.7	16.9	13.8	13.3	22.6
Discretionary cash flow/debt (%)	(10.1)	(12.5)	(1.7)	2.6	1.0
Net cash flow / capex (%)	56.2	72.0	59.7	67.7	108.6
Debt/debt and equity (%)	57.0	55.8	57.5	61.7	62.1
Return on common equity (%)	7.3	8.2	4.8	7.7	7.1
Common dividend payout ratio (un-adj.) (%)	70.4	63.4	105.9	68.6	65.4

*Fully adjusted (including postretirement obligations).

Table 3

Reconciliation Of Pinnacle West Capital Corp. Reported Amounts With Standard & Poor's Adjusted Amounts (Mil. \$)*								
--Fiscal year ended Dec. 31, 2007--								
Pinnacle West Capital Corp. reported amounts								
	Debt	Operating income (before D&A)	Operating income (before D&A)	Operating income (after D&A)	Interest expense	Cash flow from operations	Cash flow from operations	Capital expenditures
Reported	3,631.6	992.7	992.7	619.3	189.6	649.6	649.6	941.6
Standard & Poor's adjustments								
Operating leases	432.2	79.0	27.7	27.7	27.7	51.3	51.3	15.4
Postretirement benefit obligations	329.7	12.8	12.8	12.8	--	8.7	8.7	--
Capitalized interest	--	--	--	--	23.1	(23.1)	(23.1)	(23.1)
Share-based compensation expense	--	--	6.0	--	--	--	--	--
Power purchase agreements	293.0	21.1	21.1	18.1	18.1	3.0	3.0	--

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Table 3

Reconciliation Of Pinnacle West Capital Corp. Reported Amounts With Standard & Poor's Adjusted Amounts (Mil. \$)*(cont.)								
Reclassification of nonoperating income (expenses)	--	--	--	20.0	--	--	--	--
Reclassification of working-capital cash flow changes	--	--	--	--	--	--	66.6	--
US decommissioning fund contributions	--	--	--	--	--	(20.7)	(20.7)	--
Total adjustments	1,054.9	112.8	67.6	78.6	68.9	19.2	85.8	(7.7)
Standard & Poor's adjusted amounts								
	Debt	Operating income (before D&A)	EBITDA	EBIT	Interest expense	Cash flow from operations	Funds from operations	Capital expenditures
Adjusted	4,686.5	1,105.5	1,060.2	697.8	258.4	668.8	735.3	933.9

*Pinnacle West Capital Corp. reported amounts shown are taken from the company's financial statements but might include adjustments made by data providers or reclassifications made by Standard & Poor's analysts. Please note that two reported amounts (operating income before D&A and cash flow from operations) are used to derive more than one Standard & Poor's-adjusted amount (operating income before D&A and EBITDA, and cash flow from operations and funds from operations, respectively). Consequently, the first section in some tables may feature duplicate descriptions and amounts.

Ratings Detail (As Of June 25, 2003)*

Arizona Public Service Co.

Corporate Credit Rating	BBB-/Stable/A-3
Commercial Paper	
Local Currency	A-3
Senior Unsecured	
Local Currency	BBB-

Corporate Credit Ratings History

21-Dec-2005	BBB-/Stable/A-3
01-Apr-2005	BBB/Stable/A-2
19-Mar-2004	BBB/Negative/A-2

Related Entities

Pinnacle West Capital Corp.

Issuer Credit Rating	BBB-/Stable/A-3
Commercial Paper	
Local Currency	A-3
Senior Unsecured	
Local Currency	BB+

PVNGS II Funding Corp. Inc.

Issuer Credit Rating	BBB-/Stable/--
Senior Unsecured	
Local Currency	BBB-

*Unless otherwise noted, all ratings in this report are global scale ratings. Standard & Poor's credit ratings on the global scale are comparable across countries. Standard & Poor's credit ratings on a national scale are relative to obligors or obligations within that specific country.

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Issuer Ranking: U.S. Regulated Electric Utilities, Strongest To Weakest

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The U.S. electric utility industry withstood a turbulent first quarter of 2008. Strong liquidity positions for the sector as a whole enabled the companies to deal with the fallout from auction rate securities and insured deals in a credit-neutral manner. Debt issuance of nearly \$10 billion in the quarter benefited from falling interest rates.

The following list contains Standard & Poor's Ratings Services' ratings, outlooks, and business and financial profiles for companies with a primary regulated electric focus. This list reflects the current ratings and outlooks as of June 2, 2008. The rankings in each rating/outlook grouping (e.g., BBB+/Stable/-) are based on relative business risk.

A Standard & Poor's rating outlook assesses the potential direction of an issuer's long-term debt rating over the intermediate to longer term. In determining a rating outlook, consideration is given to any changes in the economic and/or fundamental business conditions. An outlook is not necessarily a precursor of a rating change or future CreditWatch action. "Positive" indicates that a rating may be raised; "negative" means a rating may be lowered; "stable" indicates that ratings are not likely to change; and "developing" means ratings may be raised or lowered.

Utility business profiles can be categorized as "Excellent," "Strong," "Satisfactory," "Weak," or "Vulnerable" under the credit ratings methodology applied to all rated corporate entities at Standard & Poor's. To determine a utility's business profile, Standard & Poor's analyzes the following qualitative business or operating characteristics: markets and service area economy; competitive position; fuel and power supply; operations; asset concentration; regulation; and management. Issuer credit ratings, shown as long-term rating/outlook or CreditWatch/short-term rating, are local and foreign currency unless otherwise noted. A dash (-) indicates not rated.

For the related industry report card, please see "Industry Report Card: U.S. Electric Utility Sector Continues To Benefit From Strong Liquidity Amid Current Credit Crunch," published March 27, 2008.

Download Table

U.S. Regulated Electric Utilities

As of June 2, 2008

Company	Corporate credit rating	Business profile	Financial profile
Madison Gas & Electric Co.	AA-/Stable/A-1+	Excellent	Modest
American Transmission Co.	A+/Stable/A-1	Excellent	Intermediate
Midwest Independent Transmission System Operator Inc.	A+/Stable/--	Excellent	Intermediate

NSTAR Electric Co.	A+/Stable/A-1	Excellent	Intermediate
NSTAR Gas Co.	A+/Stable/--	Excellent	Intermediate
NSTAR	A+/Stable/A-1	Excellent	Intermediate
Florida Power & Light Co.	A/Stable/A-1	Excellent	Intermediate
KeySpan Energy Delivery Long Island	A/Stable/A-1	Excellent	Intermediate
KeySpan Energy Delivery New York	A/Stable/A-1	Excellent	Intermediate
Northern Natural Gas Co.	A/Stable/--	Excellent	Intermediate
Alabama Power Co.	A/Stable/A-1	Excellent	Intermediate
Georgia Power Co.	A/Stable/A-1	Excellent	Intermediate
Mississippi Power Co.	A/Stable/A-1	Excellent	Intermediate
Gulf Power Co.	A/Stable/--	Excellent	Intermediate
San Diego Gas & Electric Co.	A/Stable/--	Excellent	Intermediate
Wisconsin Public Service Corp.	A/Stable/A-2	Excellent	Intermediate
FPL Group Inc.	A/Stable/--	Excellent	Intermediate
Southern Co.	A/Stable/A-1	Excellent	Intermediate
Central Hudson Gas & Electric Corp.	A/Stable/--	Excellent	Intermediate
California Independent System Operator Corp.	A-/Stable/--	Excellent	Intermediate
Massachusetts Electric Co.	A-/Stable/A-2	Excellent	Intermediate
Narragansett Electric Co.	A-/Stable/A-2	Excellent	Intermediate
New England Power Co.	A-/Stable/A-2	Excellent	Intermediate
Consolidated Edison Co. of New York Inc.	A-/Stable/A-2	Excellent	Intermediate
Orange and Rockland Utilities Inc.	A-/Stable/A-2	Excellent	Intermediate
Rockland Electric Co.	A-/Stable/--	Excellent	Intermediate
Consolidated Edison Inc.	A-/Stable/A-2	Excellent	Intermediate
Wisconsin Gas LLC	A-/Stable/A-2	Excellent	Intermediate
Peoples Gas Light & Coke Co. (The)	A-/Stable/A-2	Excellent	Intermediate
North Shore Gas Co.	A-/Stable/--	Excellent	Intermediate
Peoples Energy Corp.	A-/Stable/A-2	Excellent	Intermediate
Virginia Electric & Power Co.	A-/Stable/A-2	Excellent	Aggressive
Duke Energy Indiana Inc.	A-/Stable/A-2	Excellent	Intermediate

Duke Energy Carolinas LLC	A-/Stable/A-2	Excellent	Intermediate
Duke Energy Ohio Inc.	A-/Stable/A-2	Excellent	Intermediate
Duke Energy Kentucky Inc.	A-/Stable/--	Excellent	Intermediate
Wisconsin Electric Power Co.	A-/Stable/A-2	Excellent	Intermediate
Northern States Power Wisconsin	A-/Stable/--	Excellent	Intermediate
Wisconsin Power & Light Co.	A-/Stable/A-2	Excellent	Intermediate
Southern Indiana Gas & Electric Co.	A-/Stable/--	Excellent	Intermediate
MidAmerican Energy Holdings Co.	A-/Stable/--	Excellent	Aggressive
PPL Electric Utilities Corp.	A-/Stable/A-2	Excellent	Aggressive
Niagara Mohawk Power Corp.	A-/Stable/A-2	Excellent	Aggressive
PacifiCorp	A-/Stable/A-1	Excellent	Aggressive
Cinergy Corp.	A-/Stable/A-2	Excellent	Intermediate
Duke Energy Corp.	A-/Stable/A-2	Excellent	Intermediate
MidAmerican Energy Co.	A-/Stable/A-1	Excellent	Aggressive
National Grid USA	A-/Stable/A-2	Excellent	Intermediate
Dominion Resources Inc.	A-/Stable/A-2	Excellent	Aggressive
Integrus Energy Group Inc.	A-/Stable/A-2	Strong	Intermediate
Public Service Co. of North Carolina Inc.	A-/Negative/A-2	Excellent	Aggressive
South Carolina Electric & Gas Co.	A-/Negative/A-2	Excellent	Aggressive
SCANA Corp.	A-/Negative/--	Excellent	Aggressive
Southern California Edison Co.	BBB+/Stable/A-2	Excellent	Intermediate
Pacific Gas & Electric Co.	BBB+/Stable/A-2	Excellent	Intermediate
Florida Power Corp. d/b/a Progress Energy Florida Inc.	BBB+/Stable/A-2	Excellent	Aggressive
Carolina Power & Light Co. d/b/a Progress Energy Carolinas Inc.	BBB+/Stable/A-2	Excellent	Aggressive
Public Service Co. of Colorado	BBB+/Stable/A-2	Excellent	Aggressive
Northern States Power Co.	BBB+/Stable/A-2	Excellent	Aggressive
PECO Energy Co.	BBB+/Stable/A-2	Excellent	Aggressive
Southwestern Public Service Co.	BBB+/Stable/A-2	Excellent	Aggressive
Interstate Power & Light Co.	BBB+/Stable/A-2	Excellent	Aggressive
Wisconsin Energy Corp.	BBB+/Stable/A-2	Excellent	Aggressive

Xcel Energy Inc.	BBB+/Stable/A-2	Excellent	Aggressive
Kentucky Utilities Co.	BBB+/Stable/A-2	Excellent	Intermediate
Louisville Gas & Electric Co.	BBB+/Stable/--	Excellent	Intermediate
Progress Energy Inc.	BBB+/Stable/A-2	Excellent	Aggressive
Alliant Energy Corp.	BBB+/Stable/A-2	Excellent	Aggressive
E.ON U.S. LLC	BBB+/Stable/--	Excellent	Intermediate
Oklahoma Gas & Electric Co.	BBB+/Stable/A-2	Excellent	Intermediate
Portland General Electric Co.	BBB+/Stable/A-2	Strong	Intermediate
OGE Energy Corp.	BBB+/Stable/A-2	Strong	Intermediate
ALLETE Inc.	BBB+/Stable/A-2	Strong	Intermediate
Montana-Dakota Utilities Co.	BBB+/Stable/--	Strong	Intermediate
Connecticut Natural Gas Corp.	BBB+/Negative/--	Excellent	Intermediate
Southern Connecticut Gas Co.	BBB+/Negative/--	Excellent	Intermediate
New York State Electric & Gas Corp.	BBB+/Negative/A-2	Excellent	Aggressive
Central Maine Power Co.	BBB+/Negative/--	Excellent	Aggressive
Rochester Gas & Electric Corp.	BBB+/Negative/--	Excellent	Aggressive
Energy East Corp.	BBB+/Negative/A-2	Excellent	Aggressive
Baltimore Gas & Electric Co.	BBB+/Negative/A-2	Strong	Intermediate
Otter Tail Corp.	BBB+/Negative/--	Strong	Intermediate
Enogex Inc.	BBB+/Watch Neg/--	Satisfactory	Intermediate
Dayton Power & Light Co.	BBB/Positive/--	Excellent	Aggressive
DPL Inc.	BBB/Positive/--	Excellent	Aggressive
International Transmission Co.	BBB/Positive/--	Excellent	Aggressive
ITC Holdings Corp.	BBB/Positive/--	Excellent	Aggressive
ITC Midwest LLC	BBB/Positive/--	Excellent	Aggressive
Yankee Gas Services Co.	BBB/Stable/--	Excellent	Aggressive
Michigan Consolidated Gas Co.	BBB/Stable/A-2	Excellent	Aggressive
Public Service Electric & Gas Co.	BBB/Stable/A-2	Excellent	Aggressive
AEP Texas Central Co	BBB/Stable/--	Excellent	Aggressive
AEP Texas North Co	BBB/Stable/--	Excellent	Aggressive

Columbus Southern Power Co.	BBB/Stable/--	Excellent	Aggressive
Ohio Power Co.	BBB/Stable/--	Excellent	Aggressive
Appalachian Power Co.	BBB/Stable/--	Excellent	Aggressive
CenterPoint Energy Houston Electric LLC	BBB/Stable/--	Excellent	Aggressive
CenterPoint Energy Inc.	BBB/Stable/A-2	Excellent	Aggressive
CenterPoint Energy Resources Corp.	BBB/Stable/--	Excellent	Aggressive
Western Massachusetts Electric Co.	BBB/Stable/--	Excellent	Aggressive
Atlantic City Electric Co.	BBB/Stable/A-2	Excellent	Aggressive
Potomac Electric Power Co.	BBB/Stable/A-2	Excellent	Aggressive
Delmarva Power & Light Co.	BBB/Stable/A-2	Excellent	Aggressive
Green Mountain Power Corp.	BBB/Stable/--	Excellent	Aggressive
Kentucky Power Co.	BBB/Stable/--	Excellent	Aggressive
Public Service Co. of Oklahoma	BBB/Stable/--	Excellent	Aggressive
Southwestern Electric Power Co.	BBB/Stable/--	Excellent	Aggressive
Connecticut Light & Power Co.	BBB/Stable/--	Excellent	Aggressive
Public Service Co. of New Hampshire	BBB/Stable/--	Excellent	Aggressive
Detroit Edison Co.	BBB/Stable/A-2	Excellent	Aggressive
American Electric Power Co. Inc.	BBB/Stable/A-2	Excellent	Aggressive
Northeast Utilities	BBB/Stable/--	Excellent	Aggressive
DTE Energy Co.	BBB/Stable/A-2	Excellent	Aggressive
NorthWestern Corp.	BBB/Stable/--	Excellent	Aggressive
Indiana Michigan Power Co.	BBB/Stable/--	Strong	Aggressive
Cleco Power LLC	BBB/Stable/--	Strong	Aggressive
Cleco Corp.	BBB/Stable/--	Strong	Aggressive
Hawaiian Electric Co. Inc.	BBB/Stable/A-2	Strong	Aggressive
Idaho Power Co.	BBB/Stable/A-2	Strong	Aggressive
IDACORP Inc.	BBB/Stable/A-2	Strong	Aggressive
El Paso Electric Co.	BBB/Stable/--	Strong	Aggressive
PEPCO Holdings Inc.	BBB/Stable/A-2	Strong	Aggressive
Hawaiian Electric Industries Inc.	BBB/Stable/A-2	Strong	Aggressive
Entergy Arkansas Inc.	BBB/Negative/--	Strong	Aggressive
Entergy Louisiana LLC	BBB/Negative/--	Strong	Aggressive
Entergy Mississippi Inc.	BBB/Negative/--	Strong	Aggressive

Entergy Gulf States Louisiana LLC	BBB/Negative/--	Strong	Aggressive
Entergy Texas Inc.	BBB/Negative/--	Strong	Aggressive
Entergy Corp.	BBB/Negative/--	Strong	Aggressive
System Energy Resources Inc.	BBB/Negative/--	Strong	Aggressive
Jersey Central Power & Light Co.	BBB/Negative/--	Excellent	Aggressive
Metropolitan Edison Co.	BBB/Negative/--	Excellent	Aggressive
Pennsylvania Electric Co.	BBB/Negative/--	Excellent	Aggressive
Cleveland Electric Illuminating Co.	BBB/Negative/--	Excellent	Aggressive
Ohio Edison Co.	BBB/Negative/A-2	Excellent	Aggressive
Pennsylvania Power Co.	BBB/Negative/--	Excellent	Aggressive
Toledo Edison Co.	BBB/Negative/--	Excellent	Aggressive
FirstEnergy Corp.	BBB/Negative/--	Strong	Aggressive
Northern Indiana Public Service Co.	BBB/Watch Neg/-	Excellent	Aggressive
Kansas City Power & Light Co.	BBB/Watch Neg/A-3	Strong	Intermediate
Great Plains Energy Inc.	BBB/Watch Neg/-	Strong	Intermediate
Tampa Electric Co.	BBB-/Stable/A-3	Excellent	Aggressive
Potomac Edison Co.	BBB-/Stable/--	Excellent	Aggressive
West Penn Power Co.	BBB-/Stable/--	Excellent	Aggressive
Monongahela Power Co.	BBB-/Stable/--	Excellent	Aggressive
Westar Energy Inc.	BBB-/Stable/--	Excellent	Aggressive
Kansas Gas & Electric Co.	BBB-/Stable/--	Excellent	Aggressive
Consumers Energy Co.	BBB-/Stable/--	Excellent	Aggressive
CMS Energy Corp.	BBB-/Stable/A-3	Excellent	Aggressive
Ohio Valley Electric Corp.	BBB-/Stable/--	Excellent	Aggressive
TECO Energy Inc.	BBB-/Stable/--	Strong	Aggressive
Empire District Electric Co.	BBB-/Stable/A-3	Strong	Aggressive
Edison International	BBB-/Stable/--	Strong	Aggressive
Black Hills Power Inc.	BBB-/Stable/--	Strong	Intermediate
Arizona Public Service Co.	BBB-/Stable/A-3	Strong	Aggressive
Pinnacle West Capital Corp.	BBB-/Stable/A-3	Strong	Aggressive
Avista Corp.	BBB-/Stable/A-3	Strong	Aggressive

Allegheny Energy Inc.	BBB-/Stable/A-3	Strong	Aggressive
Union Electric Co. d/b/a AmerenUE	BBB-/Stable/A-3	Strong	Aggressive
Ameren Corp.	BBB-/Stable/A-3	Satisfactory	Aggressive
Black Hills Corp.	BBB-/Stable/--	Satisfactory	Intermediate
-			
Oncor Electric Delivery Co. LLC	BBB-/Watch Dev/--	Excellent	Intermediate
-			
Duquesne Light Co.	BBB-/Negative/--	Excellent	Highly leveraged
Duquesne Light Holdings Inc.	BBB-/Negative/--	Excellent	Highly leveraged
Entergy New Orleans Inc.	BBB-/Negative/--	Satisfactory	Aggressive
-			
Puget Sound Energy Inc.	BBB-/Watch Neg/A-3	Excellent	Aggressive
Puget Energy Inc.	BBB-/Watch Neg/--	Excellent	Aggressive
-			
Central Vermont Public Service Corp.	BB+/Stable/--	Excellent	Highly leveraged
Indianapolis Power & Light Co.	BB+/Stable/--	Excellent	Highly leveraged
IPALCO Enterprises Inc.	BB+/Stable/--	Excellent	Highly leveraged
-			
Commonwealth Edison Co.	BB/Positive/B	Satisfactory	Aggressive
Central Illinois Public Service Co.	BB/Positive/--	Satisfactory	Aggressive
Illinois Power Co.	BB/Positive/--	Satisfactory	Aggressive
Central Illinois Light Co.	BB/Positive/--	Satisfactory	Aggressive
CILCORP Inc.	BB/Positive/--	Satisfactory	Aggressive
-			
Nevada Power Co.	BB/Stable/--	Excellent	Highly leveraged
Sierra Pacific Power Co.	BB/Stable/--	Excellent	Highly leveraged
Sierra Pacific Resources	BB/Stable/B-2	Excellent	Highly leveraged
Tucson Electric Power Co.	BB/Stable/B-2	Strong	Highly

			leveraged
Aquila Inc.	BB-/Watch Pos/--	Satisfactory	Highly leveraged
Texas-New Mexico Power Co.	BB-/Stable/--	Satisfactory	Highly leveraged
Public Service Co. of New Mexico	BB-/Stable/B-2	Satisfactory	Highly leveraged
PNM Resources Inc.	BB-/Stable/B-2	Satisfactory	Highly leveraged

ARIZONA CORPORATION COMMISSION
STAFF'S SECOND SET OF DATA REQUESTS TO
ARIZONA PUBLIC SERVICE COMPANY,
REGARDING THE AMENDED APPLICATION TO APPROVE RATE SCHEDULES
DESIGNED TO DEVELOP A JUST AND REASONABLE RATE OF RETURN
E-01345A-08-0172 – INTERIM RATES
JULY 31, 2008

Staff Interim 2.26 Refer to paragraph 31, of Mr. Brandt's 6/6/08 affidavit. Please identify, quantify and explain in detail the impact of the Pinnacle West \$460 million investment in APS had on APS's FFO/Debt ratios in 2005, 2006, 2007 and 2008. Provide all related calculations and quantifications.

Response: Attached as APS13022 is the impact to APS's FFO/Debt ratio due to Pinnacle West's \$460 million investment in APS for 2005, 2006, 2007 and 2008.

Witness: Donald Brandt

APS FFO to Debt (\$000)

<u>Line</u>	Year Ended December 31, <u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>
				(1)
1 Funds from Operations	522,518	695,558	753,821	908,656
2 Total Debt (with imputed debt)	3,182,613	3,801,599	4,061,778	3,942,244
3 FFO to Debt	16.4%	18.3%	18.6%	23.0%
<u>Adjusted to Remove \$460 million of Equity Infusions:</u>				
4 Funds from Operations	522,518	695,558	753,821	908,656
5 Lower FFO for interest on \$460m of additional debt (\$460 m x 7% x 60% after-tax)		(19,000)	(19,000)	(19,000)
6 FFO if \$460m of equity infusions had not been made		<u>676,558</u>	<u>734,821</u>	<u>889,656</u>
7 Total Debt (with imputed debt)	3,182,613	3,801,599	4,061,778	3,942,244
8 Remove \$460m of equity infusions, replace with debt	<u>250,000</u>	<u>460,000</u>	<u>460,000</u>	<u>460,000</u>
9 Total Debt if \$460m of equity infusions had not been made	3,432,613	4,261,599	4,521,778	4,402,244
10 FFO to Debt	15.2%	15.9%	16.3%	20.2%

(1) 2008 FFO does not reflect any interim base rate relief and includes approximately \$80 million of accelerated tax depreciation of the 2008 Economic Stimulus Act, the majority of which will not recur in 2009 forward. The Company's attrition pro forma includes the tax benefits from the 2008 Economic Stimulus Act.

Value Line Investment Survey for Windows® Version 3.0

About Value Line

Value Line was founded in New York in 1931 by Arnold Bernhard, then a young analyst, amidst the crisis of confidence wrought by the Great Depression. His goal was to help investors in their quest to achieve superior returns from stocks by providing access to the same information that professionals had at their fingertips. His vision grew into one of the most enduring and trusted institutions in the financial world. Backed by disciplined, objective analytic methodologies that have been proven over six decades, and by one of the world's largest independent research staffs, including over 100 professional securities analysts, statisticians and economists, Value Line has become an indispensable source for investors around the globe. Value Line's businesses are broad-based, including financial publications and electronic data services, a family of no-load mutual funds, and asset management for retirement and endowment accounts. Its research services include domestic stocks, Canadian stocks, mutual funds, convertibles, and options, which are available in both print and electronic form.

Value Line's headquarters are located at 220 East 42nd Street, New York, NY 10017. Telephone 212-907-1500. For technical support, call 800-654-0508.

The Value Line Investment Survey

The Value Line Investment Survey printed version was created in 1931 for one purpose and one purpose only to guide you in your quest to realize superior returns on your invested capital. Based on disciplined, objective, quantitative, analytical methodologies that have proven themselves over the last 60 years, plus a staff of more than 70 professional securities analysts, Value Line can serve as an invaluable tool in making your investment decisions.



Value Line Investment Survey for Windows® Version 3.0

About Value Line

The Value Line Investment
Survey

The Value Line Investment
Survey for Windows®

What's New in Version 3.0

Value Line Technical
Support



Average Price for the Year - The sum of the 52 Wednesday closing prices for the year divided by 52.

B

Backlog - Orders for goods and services that have been received, but not yet delivered or rendered.

Bank SL Deposits Latest Qtr - Customer deposits in short-term, marketable, liquid, low-risk debt securities for the latest quarter.

Bank SL Loans Latest Qtr - The total for loans outstanding for the latest quarter.

Basis Point - In the context of discussions on interest rates, one basis point equals one-hundredth of one percentage point.

Benefits & Reserves (Insurance) - Funds received from policy holders in exchange for promises to make future payments to the insured or third party in the event of sickness disability, or hospital confinement.

Beta - A relative measure of the historical sensitivity of the stock's price to overall fluctuations in the New York Stock Exchange Composite Index. A Beta of 1.50 indicates a stock tends to rise (or fall) 50% more than the New York Stock Exchange Composite Index. The "Beta coefficient" is derived from a regression analysis of the relationship between weekly percentage changes in the price of a stock and weekly percentage changes in the NYSE Index over a period of five years. In the case of shorter price histories, a smaller time period is used, but two years is the minimum. The Betas are adjusted for their long-term tendency to converge toward 1.00. Additionally, Value Line shows betas computed based on monthly total returns for the trailing three year, five-year and 10-year periods.

Bond - A long-term debt instrument, characterized typically by fixed, semiannual interest payments and a specified maturity date.

Book Value Per Share - Net worth (including intangible assets), less preferred stock at liquidating or redemption value, divided by common shares outstanding, or common shareholder equity divided by common shares outstanding.

Federal Home Loan Bank Advances (Savings & Loans) (Thriffs) - Borrowings from the Federal Home Loan Bank at year end.

Federal Purchases - Consist largely of wages paid to Federal employees and Federal purchases of goods and services from businesses. Reported by the Commerce Department when it releases the Gross National Product (GNP) report.

Federal Reserve Board - The governing body of the Federal Reserve System, which regulates certain banks and is charged with setting national monetary policy. Often referred to as "the Fed."

FHLB Advances (Thrift Industry) - Borrowing from the regional Federal Home Loan Bank.

52-Week High Price - The highest trading value of a stock over the prior year.

52-Week Low Price - The lowest trading value of a stock over the prior year.

Financial Strength Rating - A relative measure of financial strength of the companies reviewed by Value Line. The relative ratings range from A++ (strongest) down to C (weakest), in nine steps.

Financial Times-Stock Exchange 100 (FT-SE 100) - A stock price index made of 100 of the largest stocks traded in London. The index is published by The Financial Times, a London-based financial newspaper.

Finding Cost (Natural Gas [Diversified] and Petroleum Industries) - The amount of money spent per barrel to increase proved reserves through acquisitions, discovery, or enhanced recovery.

Fiscal Year-End Date - The date of a company's fiscal year end.

5-Year Book Value Growth - See *Growth Rates*.

5-Year Cash Flow Growth - See *Growth Rates*.

5-Year Dividends Growth - See *Growth Rates*.

Residential Fixed Investment - Expenditures for housing reported by the Commerce Department in its regular Gross National Product (GNP) reports.

Retail Sales - A monthly measure of all U.S. retail activity, published by the Commerce Department.

Retained Earnings - When relating to the income account, represents net profit for the year less all common and preferred dividends. With respect to the balance sheet or common equity, it is the sum of net profit in all years of the company's existence less all dividends (common and preferred) ever paid. In this case, also known as earnings retained or earned surplus.

Return on Revenue - EPS expressed as a percentage to sales per share.

Revenue Passenger Miles (Air Transport Industry) - A measure of airline traffic. Each revenue passenger mile represents one revenue-paying passenger flown one mile.

Revenues (Electric Utility, Natural Gas/Distribution), Telecommunications Industries) - The amounts billed for services rendered.

Revenues (Real Estate Industry) - The total of rental, construction, and interest income and property sales.

Revenues Per Share - Gross revenues for the year divided by the number of common shares outstanding at year end.

Risk Arbitrage - See *Arbitrage*.
S

Safety Rank - A measurement of potential risk associated with individual common stocks. The Safety Rank is computed by averaging two other Value Line indexes - the Price Stability Index and the Financial strength Rating. Safety Ranks range from 1 (Highest) to 5 (Lowest). Conservative investors should try to limit their purchases to equities ranked 1 (Highest) and 2 (Above Average) for Safety.

Sales or Revenues - Total sales revenue less returns, allowances, and sales discounts; also known as net sales.

STANDARD
& POOR'S

Security Owner's

Stock Guide

AUGUST 2008

issue with issuer in default on

that there is "insufficient information to rate a particular type of

an overall credit quality of 'AA'.

BBB' may be modified to show

nished to Standard & Poor's by one or other sources. It considers 1- or 2-year withdrawal as a result of rating securities. Such comparison by issuers of such securities is not therewith.

EARNINGS AND DIVIDEND RANKINGS FOR COMMON STOCKS

The final score for each stock is measured against a scoring matrix determined by analysis of the scores of a large and representative sample of stocks. The range of scores in the array of this sample has been aligned with the following ladder of rankings, but the system provides for making exceptions where the score reflects an outstanding earnings-dividend record.

A+ Highest	A- Above Average	B+ Average	B Below Average	B- Lower	C Lowest	D In Reorganization
A High						

The positions as determined above may be modified in some instances by special considerations, such as natural disasters, massive strikes, and non-recurring accounting adjustments.

A ranking is just a forecast of future market price performance, but is basically an appraisal of past performance of earnings and dividends, and relative current standing. These rankings must not be used as market recommendations, a high-score stock may at times be so overpriced as to justify its sale, while a low-score stock may be attractively priced for purchase. Rankings based upon earnings and dividend records are not a substitute for complete analysis. They cannot take into account potential effects on management, changes in internal company policies nor yet fully reflected in the earnings/price and dividend record, public relations standing, recent competitive shifts, and a host of other

other factors that may be relevant to investment status and decision

NOTE – Standard & Poor's Earnings and Dividend Rankings ("Rankings") may be used only for the subscriber's internal use, or as part of the subscriber's analysis of common stocks for investment purposes in the ordinary course of subscribers' businesses, provided, however, that in no event may the Rankings be redistributed to third parties. Use of the Rankings as part of the express investment strategy for any mutual fund, unit investment trust, variable annuity or other pooled investment vehicle is subject to the express written agreement of Standard & Poor's.

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PINNACLE WEST				NYSE-PNW		RECENT PRICE		32.11		P/E RATIO		12.8		(Trailing: 11.6 Median: 14.0)		RELATIVE P/E RATIO		0.83		DIV'D YLD		6.5%		VALUE LINE																	
TIMELINESS 4				Lowered 6/6/08		High: 42.8		49.3		43.4		52.7		50.7		46.7		40.5		45.8		46.7		51.0		51.7		42.9		Target Price		Range									
SAFETY 2				Lowered 6/6/08		Low: 27.6		39.4		30.2		25.7		37.7		21.7		28.3		36.3		39.8		38.3		36.8		30.3		2011		2012		2013							
TECHNICAL 4				Lowered 6/20/08		LEGENDS		1.28 x Dividends p sh divided by Interest Rate		Relative Price Strength		Options: Yes		Shaded area indicates recession																											
BETA .80 (1.00 = Market)																																									
2011-13 PROJECTIONS																																									
Price				Gain		Ann'l Total																																			
High				40		11%																																			
Low				30		(-5%)																																			
Insider Decisions																																									
S O N D J F M A M																																									
to Buy				0 0 0 0 0 0 0 0 0																																					
Options				0 0 2 0 0 0 0 0 0																																					
to Sell				0 0 2 0 0 0 0 0 0																																					
Institutional Decisions																																									
3Q2007				4Q2007		1Q2008																																			
to Buy				135		151		133																																	
to Sell				135		125		136																																	
High/Low				87323		82999		84951																																	
Percent shares traded				15		10		5																																	
1992				1993		1994		1995		1996		1997		1998		1999		2000		2001		2002		2003		2004		2005		2006		2007		2008		2009		© VALUE LINE PUB., INC.		11-13	
19.39				19.66		19.28		19.08		20.77		23.52		25.12		28.57		43.50		53.66		28.90		30.87		31.59		30.16		34.03		35.07		37.25		39.65		Revenues per sh		46.80	
4.70				5.25		5.09		5.16		5.90		7.12		7.34		7.73		7.99		8.72		7.01		7.33		6.93		5.76		6.76		6.69		6.85		7.35		"Cash Flow" per sh		9.05	
1.73				1.95		1.99		2.22		2.47		2.76		2.85		3.18		3.35		3.68		2.53		2.52		2.58		2.24		3.17		2.96		2.80		2.90		Earnings per sh A		3.15	
--				.20		.83		.93		1.03		1.13		1.23		1.33		1.43		1.53		1.63		1.73		1.83		1.93		2.03		2.10		2.10		2.12		Div'd Decl'd per sh B=		2.30	
2.57				2.69		2.92		3.38		2.95		3.63		3.76		4.05		7.76		12.27		9.81		7.60		5.86		6.39		7.38		9.14		10.55		11.80		Cap'l Spending per sh		9.35	
17.00				18.87		20.32		21.49		22.51		23.90		25.50		26.00		28.09		29.46		29.44		31.00		32.14		34.57		34.47		35.15		35.85		36.60		Book Value per sh C		39.10	
87.16				87.42		87.43		87.52		87.52		84.83		84.83		84.83		84.83		84.83		91.26		91.29		91.79		99.08		99.96		100.49		100.70		100.90		Common Shs Outst'g D		101.50	
10.8				11.5		9.6		10.8		11.8		11.8		15.2		11.9		11.3		12.0		14.4		14.0		15.8		19.2		13.7		14.9		15.5		11.80		Avg Ann'l P/E Ratio		10.5	
.66				.68		.63		.72		.74		.68		.79		.68		.73		.61		.79		.80		.83		1.02		.74		.79		.79		.70		Avg Ann'l Div'd Yield		7.0%	
--				.9%		4.3%		3.9%		3.5%		3.5%		2.8%		3.5%		3.8%		3.5%		4.5%		4.9%		4.5%		4.5%		4.7%		4.8%		4.8%		4.8%		4.8%			
CAPITAL STRUCTURE as of 3/31/08																																									
Total Debt \$3486.3 mill. Due in 5 Yrs \$1765.7 mill.																																									
LT Debt \$3114.6 mill. LT Interest \$182.3 mill.																																									
(LT Interest earned: 3.0x)																																									
Pension Assets-12/07 \$1.32 bil. Oblig. \$1.72 bil.																																									
Pfd Stock None																																									
Common Stock 100,633,751 shs.																																									
MARKET CAP: \$3.2 billion (Mid Cap)																																									
ELECTRIC OPERATING STATISTICS																																									
2005				2006		2007																																			
% Change Retail Sales (KWH)				+4.4		+5.6		+4.3																																	
Avg. Indust. Use (MWH)				670		730		665																																	
Avg. Indust. Res. per KWH (%)				6.28		6.87		7.30																																	
Capacity at Peak (MW)				7412		7652		6783																																	
Peak Load, Summer (MW)				7000		7652		7545																																	
Annual Load Factor (%)				50.0		48.0		51.4																																	
% Change Customers (yr-end)				+4.3		+4.4		+3.3																																	
Fixed Charge Cov. (%)				278		324		291																																	
ANNUAL RATES of change (per sh)				Past 10 Yrs.		Past 5 Yrs.		Est'd '05-'07 to '11-'13																																	
Revenues				4.5%		-4.5%		6.0%																																	
"Cash Flow"				.5%		-4.0%		6.0%																																	
Earnings				1.0%		-2.5%		2.0%																																	
Dividends				7.0%		5.8%		2.0%																																	
Book Value				4.5%		3.5%		2.0%																																	
QUARTERLY REVENUES (\$ mil.)																																									
Cal-ender				Mar.31		Jun.30		Sep.30		Dec.31																															
2005				585.0		756.8		955.6		691.6		2988.0																													
2006				670.2		925.0		1076.5		730.1		3401.8																													
2007				695.1		863.4		1205.9		759.2		3523.6																													
2008				736.7		926.2		1260		827.1		3750																													
2009				800		990		1320		890		4000																													
EARNINGS PER SHARE A																																									
Cal-ender				Mar.31		Jun.30		Sep.30		Dec.31																															
2005				.26		.88		.86		.24		2.24																													
2006				.12		1.11		1.84		.10		3.17																													
2007				.16		.78		1.99		.03		2.98																													
2008				d.04		1.33		1.40		.11		2.80																													
2009				.20		.85		1.70		.15		2.90																													
QUARTERLY DIVIDENDS PAID B=																																									
Cal-ender				Mar.31		Jun.30		Sep.30		Dec.31																															
2004				.45		.45		.45		.475		1.83																													
2005				.475		.475		.475		.50		1.93																													
2006				.50		.50		.50		.525		2.03																													
2007				.525		.525		.525		.525		2.10																													
2008				.525		.525		.525		.																															

168 PIE-PNM

168 PIE-PNM		Name of Issue		Inst. Hold		Princ. Business		Price Range				July, 2008				% Ann. Div.				Standard & Poor's																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Symbol	Index	Call Price of Put. Stock	Market	Rank	Rating	Co.	Inst. Hold	High	Low	2007	High	Low	2008	High	Low	2009	High	Low	2010	High	Low	2011	High	Low	2012	High	Low	2013	High	Low	2014	High	Low	2015	High	Low	2016	High	Low	2017	High	Low	2018	High	Low	2019	High	Low	2020	High	Low	2021	High	Low	2022	High	Low	2023	High	Low	2024	High	Low	2025	High	Low	2026	High	Low	2027	High	Low	2028	High	Low	2029	High	Low	2030	High	Low	2031	High	Low	2032	High	Low	2033	High	Low	2034	High	Low	2035	High	Low	2036	High	Low	2037	High	Low	2038	High	Low	2039	High	Low	2040	High	Low	2041	High	Low	2042	High	Low	2043	High	Low	2044	High	Low	2045	High	Low	2046	High	Low	2047	High	Low	2048	High	Low	2049	High	Low	2050	High	Low	2051	High	Low	2052	High	Low	2053	High	Low	2054	High	Low	2055	High	Low	2056	High	Low	2057	High	Low	2058	High	Low	2059	High	Low	2060	High	Low	2061	High	Low	2062	High	Low	2063	High	Low	2064	High	Low	2065	High	Low	2066	High	Low	2067	High	Low	2068	High	Low	2069	High	Low	2070	High	Low	2071	High	Low	2072	High	Low	2073	High	Low	2074	High	Low	2075	High	Low	2076	High	Low	2077	High	Low	2078	High	Low	2079	High	Low	2080	High	Low	2081	High	Low	2082	High	Low	2083	High	Low	2084	High	Low	2085	High	Low	2086	High	Low	2087	High	Low	2088	High	Low	2089	High	Low	2090	High	Low	2091	High	Low	2092	High	Low	2093	High	Low	2094	High	Low	2095	High	Low	2096	High	Low	2097	High	Low	2098	High	Low	2099	High	Low	2100	High	Low	2101	High	Low	2102	High	Low	2103	High	Low	2104	High	Low	2105	High	Low	2106	High	Low	2107	High	Low	2108	High	Low	2109	High	Low	2110	High	Low	2111	High	Low	2112	High	Low	2113	High	Low	2114	High	Low	2115	High	Low	2116	High	Low	2117	High	Low	2118	High	Low	2119	High	Low	2120	High	Low	2121	High	Low	2122	High	Low	2123	High	Low	2124	High	Low	2125	High	Low	2126	High	Low	2127	High	Low	2128	High	Low	2129	High	Low	2130	High	Low	2131	High	Low	2132	High	Low	2133	High	Low	2134	High	Low	2135	High	Low	2136	High	Low	2137	High	Low	2138	High	Low	2139	High	Low	2140	High	Low	2141	High	Low	2142	High	Low	2143	High	Low	2144	High	Low	2145	High	Low	2146	High	Low	2147	High	Low	2148	High	Low	2149	High	Low	2150	High	Low	2151	High	Low	2152	High	Low	2153	High	Low	2154	High	Low	2155	High	Low	2156	High	Low	2157	High	Low	2158	High	Low	2159	High	Low	2160	High	Low	2161	High	Low	2162	High	Low	2163	High	Low	2164	High	Low	2165	High	Low	2166	High	Low	2167	High	Low	2168	High	Low	2169	High	Low	2170	High	Low	2171	High	Low	2172	High	Low	2173	High	Low	2174	High	Low	2175	High	Low	2176	High	Low	2177	High	Low	2178	High	Low	2179	High	Low	2180	High	Low	2181	High	Low	2182	High	Low	2183	High	Low	2184	High	Low	2185	High	Low	2186	High	Low	2187	High	Low	2188	High	Low	2189	High	Low	2190	High	Low	2191	High	Low	2192	High	Low	2193	High	Low	2194	High	Low	2195	High	Low	2196	High	Low	2197	High	Low	2198	High	Low	2199	High	Low	2200	High	Low	2201	High	Low	2202	High	Low	2203	High	Low	2204	High	Low	2205	High	Low	2206	High	Low	2207	High	Low	2208	High	Low	2209	High	Low	2210	High	Low	2211	High	Low	2212	High	Low	2213	High	Low	2214	High	Low	2215	High	Low	2216	High	Low	2217	High	Low	2218	High	Low	2219	High	Low	2220	High	Low	2221	High	Low	2222	High	Low	2223	High	Low	2224	High	Low	2225	High	Low	2226	High	Low	2227	High	Low	2228	High	Low	2229	High	Low	2230	High	Low	2231	High	Low	2232	High	Low	2233	High	Low	2234	High	Low	2235	High	Low	2236	High	Low	2237	High	Low	2238	High	Low	2239	High	Low	2240	High	Low	2241	High	Low	2242	High	Low	2243	High	Low	2244	High	Low	2245	High	Low	2246	High	Low	2247	High	Low	2248	High	Low	2249	High	Low	2250	High	Low	2251	High	Low	2252	High	Low	2253	High	Low	2254	High	Low	2255	High	Low	2256	High	Low	2257	High	Low	2258	High	Low	2259	High	Low	2260	High	Low	2261	High	Low	2262	High	Low	2263	High	Low	2264	High	Low	2265	High	Low	2266	High	Low	2267	High	Low	2268	High	Low	2269	High	Low	2270	High	Low	2271	High	Low	2272	High	Low	2273	High	Low	2274	High	Low	2275	High	Low	2276	High	Low	2277	High	Low	2278	High	Low	2279	High	Low	2280	High	Low	2281	High	Low	2282	High	Low	2283	High	Low	2284	High	Low	2285	High	Low	2286	High	Low	2287	High	Low	2288	High	Low	2289	High	Low	2290	High	Low	2291	High	Low	2292	High	Low	2293	High	Low	2294	High	Low	2295	High	Low	2296	High	Low	2297	High	Low	2298	High	Low	2299	High	Low	2300	High	Low	2301	High	Low	2302	High	Low	2303	High	Low	2304	High	Low	2305	High	Low	2306	High	Low	2307	High	Low	2308	High	Low	2309	High	Low	2310	High	Low	2311	High	Low	2312	High	Low	2313	High	Low	2314	High	Low	2315	High	Low	2316	High	Low	2317	High	Low	2318	High	Low	2319	High	Low	2320	High	Low	2321	High	Low	2322	High	Low	2323	High	Low	2324	High	Low	2325	High	Low	2326	High	Low	2327	High	Low	2328	High	Low	2329	High	Low	2330	High	Low	2331	High	Low	2332	High	Low	2333	High	Low	2334	High	Low	2335	High	Low	2336	High	Low	2337	High	Low	2338	High	Low	2339	High	Low	2340	High	Low	2341	High	Low	2342	High	Low	2343	High	Low	2344	High	Low	2345	High	Low	2346	High	Low	2347	High	Low	2348	High	Low	2349	High	Low	2350	High	Low	2351	High	Low	2352	High	Low	2353	High	Low	2354	High	Low	2355	High	Low	2356	High	Low	2357	High	Low	2358	High	Low	2359	High	Low	2360	High	Low	2361	High	Low	2362	High	Low	2363	High	Low	2364	High	Low	2365	High	Low	2366	High	Low	2367	High	Low	2368	High	Low	2369	High	Low	2370	High	Low	2371	High	Low	2372	High	Low	2373	High	Low	2374	High	Low	2375	High	Low	2376	High	Low	2377	High	Low	2378	High	Low	2379	High	Low	2380	High	Low	2381	High	Low	2382	High	Low	2383	High	Low	2384	High	Low	2385	High	Low	2386	High	Low	2387	High	Low	2388	High	Low	2389	High	Low	2390	High	Low	2391	High	Low	2392	High	Low	2393	High	Low	2394	High	Low	2395	High	Low	2396	High	Low	2397	High	Low	2398	High	Low	2399	High	Low	2400	High	Low	2401	High	Low	2402	High	Low	2403	High	Low	2404	High	Low	2405	High	Low	2406	High	Low	2407	High	Low	2408	High	Low	2409	High	Low	2410	High	Low	2411	High	Low	2412	High	Low	2413	High	Low	2414	High	Low	2415	High	Low	2416	High	Low	2417	High	Low	2418	High	Low	2419	High	Low	2420	High	Low	2421	High	Low	2422	High	Low	2423	High	Low	2424	High	Low	2425	High	Low	2426	High	Low	2427	High	Low	2428	High	Low	2429	High	Low	2430	High	Low	2431	High	Low	2432	High	Low	2433	High	Low	2434	High	Low	2435	High	Low	2436	High	Low	2437	High	Low	2438	High	Low	2439	High	Low	2440	High	Low	2441	High	Low	2442	High	Low	2443	High	Low	2444	High	Low	2445	High	Low	2446	High	Low	2447	High	Low	2448	High	Low	2449	High	Low	2450	High	Low	2451	High	Low	2452	High	Low	2453	High	Low	2454	High	Low	2455	High	Low	2456	High	Low	2457	High	Low	2458	High	Low	2459	High	Low	2460	High	Low	2461	High	Low	2462	High	Low	2463	High	Low	2464	High	Low	2465	High	Low	2466	High	Low	2467	High	Low	2468	High	Low	2469	High	Low	2470	High	Low	2471	High	Low	2472	High	Low	2473	High	Low	2474	High	Low	2475	High	Low	2476	High	Low	2477	High	Low	2478	High	Low	2479	High	Low	2480	High	Low	2481	High	Low	2482	High	Low	2483	High	Low	2484	High	Low	2485	High	Low	2486	High	Low	2487	High	Low	2488	High	Low	2489	High	Low	2490	High	Low	2491	High	Low	2492	High	Low	2493	High	Low	2494	High	Low	2495	High	Low	2496	High	Low	2497	High	Low	2498	High	Low	2499	High	Low	2500	High	Low	2501	High	Low	2502	High	Low	2503	High	Low	2504	High	Low	2505	High	Low	2506	High	Low	2507	High	Low	2508	High	Low	2509	High	Low	2510	High	Low	2511	High	Low	2512	High	Low	2513	High	Low	2514	High	Low	2515	High	Low	2516	High	Low	2517	High	Low	2518	High	Low	2519	High	Low	2520	High	Low	2521	High	Low	2522	High	Low	2523	High	Low	2524	High	Low	2525	High	Low	2526	High	Low	2527	High	Low	2528	High	Low	2529	High	Low	2530	High	Low	2531	High	Low	2532	High	Low	2533	High	Low	2534	High	Low	2535	High	Low	2536	High	Low	2537	High	Low	2538	High	Low	2539	High	Low	2540	High	Low	2541	High	Low	2542	High	Low	25